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PRIVATE AND CONFIDENTIAL

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GPO Box 39
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Dear Sir,

Drayton South EA submission

This submission is made on behalf of Coolmore Australia (**Coolmore**) in relation to major project application 11_0062 lodged by Anglo American Metallurgical Coal Pty Ltd (**Anglo**) in respect of the Drayton South Coal Project (**Project Application**). The Project Application is described in the *Drayton South Coal Project: Environmental Assessment* prepared by Hansen Bailey and dated November 2012 **(EA**).

Coolmore welcomes the opportunity to make the following submission.

1. Executive Summary

1.1 Coolmore is a multi-million dollar thoroughbred breeding operation located west of Jerrys Plains in the Hunter Valley and is immediately adjacent to the Project Application boundary. Coolmore is located on approximately 8,500 acres of prime agricultural land which has been identified as 'strategic agricultural land – equine critical industry cluster' by the *Strategic Regional Land Use Plan – Upper Hunter*.

1.2 The international thoroughbred horse breeding studs are some of the most visually sensitive activities in the Hunter Valley. Of great importance to Coolmore is its reputation as an ideal environment for thoroughbred horse breeding, well removed from mining or heavy industrial activities. Visual amenity (along with clean air, clean water, quiet pastures, soil types and the topography of the region) is central to the presentation and operation of our business. Coolmore is highly sensitive to any impacts on our environment, especially in the context of coal mining and exploration activities.

1.3 The Project Application as described in the EA involves grossly unacceptable impacts to Coolmore in relation to visual intrusion, groundwater and surface water impacts, noise and vibration, and air quality. It is not appropriate for an open cut coal mine to be approved immediately adjacent to an existing, highly profitable and sensitive thoroughbred horse breeding operation and in this regard the Project Application is a clear example of inappropriate land use conflict. Further, the approval of the Project Application in its current form would be inconsistent with the legal and policy framework for project applications in respect of coal mining and related development in NSW.

1.4 The most critical visual impact of the Project is the construction of the Houston bund (over-burden dump). The Houston bund constitutes a monstrous intrusion into the immediate visual catchment of Coolmore's operations. The bund is the length of two and a half Sydney Harbour Bridges, and the height between the Sydney Harbour Bridge platform and its peak. By any standards, this is an enormous, discordant visual feature, particularly considering that it is, is essence, an overburden dump masquerading as an environmental mitigation measure.

1.5 Coolmore were of the understanding that prior to the lodgement of the EA, the Department of Planning and Infrastructure directed Anglo to remove any visual intrusion in Coolmore's visual catchment area. It has therefore come as a great surprise to Coolmore that three options for the Houston Visual Bund (each with significant visual impacts) are in fact being proposed by the EA.

1.6 The proponent's consultation with Coolmore in relation to the bund has been totally inadequate. Following some preliminary work by our expert consultants, it appears that there is a feasible and less visually intrusive alternative available which we have entitled "*Option 4*". Coolmore notes that even if Option 4 is implemented, it would still object to the project in the strongest terms. However, if the project was to proceed, in Coolmore's view the implementation of Option 4 would operate to address (better than Option 3) the adverse visual impacts on Coolmore's operations.

2. Coolmore's operations and the Hunter Valley Thoroughbred Industry

Coolmore's operations

2.1 Coolmore is a multi-million dollar thoroughbred breeding operation located west of Jerrys Plains in the Hunter Valley and is part of the global Coolmore thoroughbred horse breeding and racing operation. Coolmore is one of the two largest and most successful thoroughbred horse breeders in the world. Coolmore has three global operations – Tipperary in Ireland, Kentucky in the USA and Jerrys Plains in Australia's Hunter Valley.

2.2 Coolmore's operation in the Hunter Valley is a significant part of the global operation and an integral part of Australia's multi-billion dollar thoroughbred breeding industry.

2.3 Coolmore Australia has been operating a premier thoroughbred horse stud at Jerrys Plains for more than 15 years. During that period, Coolmore has made significant capital investments in developing its Jerrys Plains property into one of the most impressive and successful thoroughbred breeding studs in Australia.

2.4 The area of Coolmore's property is approximately 8,500 acres, classified as *'Strategic Agricultural Land – Equine Cluster'*. Over time, Coolmore has spent many tens of millions of dollars in capital improvements on land including buildings, irrigation systems, fences, dams, watercourses and other structures. At any time, it is estimated that the bloodstock present on Coolmore property is well in excess of $100 million dollars and during certain times of the year, in excess of $200 million dollars.

2.5 Coolmore is also a significant employer in the Hunter (employing up to 150 people and contributing to the employment of thousands more in the region). It is also a significant producer, domestic supplier and exporter of champion thoroughbreds and contributes to Australia's international reputation as a world class thoroughbred breeding and racing nation.

2.6 Coolmore has an internationally renowned reputation for producing champion thoroughbreds and currently stands many of Australia's current champion thoroughbred

stallions including 2 time Champion Sire *Encosta de Lago*, Champion Sire of Australia *Fastnet Rock*, *High Chaparral* (sire of *So You Think*) and international champion racehorse *So You Think*. Other recent champions bred at the property include champion racehorses and Champion Sires *Redoutes Choice* and *Fastnet Rock*, champion racehorse *Special Harmony* and international champion racehorses and young sires *Haradasun* and *Musir*.

Hunter Valley Thoroughbred Industry

2.7 The Hunter Valley is home to the world's second largest concentration of thoroughbred breeding studs outside of Kentucky in the USA and is one of three global Centres of Thoroughbred Breeding Excellence (alongside Kentucky in the US and Newmarket in the UK).

2.8 The Thoroughbred Breeding Industry in the Hunter Valley is vertically integrated and interdependent. Not only is it Australia's largest domestic producer and exporter of premium thoroughbreds and a significant regional, state and national employer, it also supports a sophisticated infrastructure of network support industries (veterinarians, farriers, transport and feed companies) that would not be located in the Hunter Valley but for the presence of world scale and world class thoroughbred breeding operations.

2.9 In 2006, a report commissioned by the Australian Racing Board estimated that the thoroughbred horse breeding and racing industry contributes more than A$5 billion in value added to the national economy per annum.

2.10 Further information about Coolmore and its operations can be obtained at http://www.coolmore.com/farm/australia/

3. Legal and policy background

Legislative provisions

3.1 The Director-General's environmental assessment requirements were issued in respect of the Project Application on 3 August 2011. Under Schedule 6A clause 2 of the EP&A Act, the Project Application is classified as a *'Transitional Part 3A Project'* because the Director-General's requirements were notified within 2 years of the Part 3A repeal date of 1 October 2011. Accordingly, Part 3A of the EP&A Act is to continue to apply to the assessment and determination of the Project Application.

3.2 Under Clause 12 of the Mining SEPP, before determining an application for consent for development for the purposes of mining, petroleum production or extractive industry, the consent authority must:

> *"(a) consider:*
>
> *(i) the existing uses and approved uses of land in the vicinity of the development, and*
> *(ii) whether or not the development is likely to have a significant impact on the uses that, in the opinion of the consent authority having regard to land use trends, are likely to be the preferred uses of land in the vicinity of the development, and*
> *(iii) any ways in which the development may be incompatible with any of those existing, approved or likely preferred uses, and*

(b) evaluate and compare the respective public benefits of the development and the land uses referred to in paragraph (a) (i) and (ii), and

(c) evaluate any measures proposed by the applicant to avoid or minimise any incompatibility, as referred to in paragraph (a) (iii)."

3.3 Coolmore is of the view that the existing thoroughbred breeding operations carried out on the Property are one of the 'preferred uses of land in the vicinity of the development' for the following reasons:

(a) thoroughbred breeding is a long term land use. It is a sustainable, environmentally friendly industry that contributes greatly to the national and State economy;

(b) As referred to above, Coolmore land has been mapped as *'Strategic Agricultural Land – Equine'* and partly *'Strategic Agricultural Land – Biophysical'* in the draft *'Strategic Regional Land Use Plan: Upper Hunter - Coal Resource and Strategic Agricultural Land'* Map. This is a recognition of the strategic importance of Coolmore land by the State Government to the thoroughbred breeding industry.

3.4 All State significant mining and petroleum proposals development applications on strategic agricultural land will require an *'agricultural impact statement'* to be prepared and submitted as part of the environmental assessment process. The purpose of the statement would be to demonstrate that impacts on agricultural resources and industries are avoided or minimised to acceptable levels. The term "*agricultural resources*" is used to describe the land on which agriculture is dependent and the associated water resources (quality and quantity) that are linked to that land. Coolmore has significant concerns in relation to the Agricultural Impact Statement which are referred to in further detail below.

Policy statements of State Government re Strategic Agricultural Land and land use conflict

3.5 We welcome the Premier's acknowledgement that the Hunter Valley's Thoroughbred Breeding Industry is "*nationally significant*" and "*world famous*".

3.6 We also commend the Deputy Premier's comments that "*if any proposed mining or gas extraction activity is likely to harm our prime agricultural land or other important rural industry clusters or the water resources associated with those areas, it will not go ahead under this government*".

3.7 Coolmore considers it relevant that the following additional statements have been made by current members of the State Government:

(a) *"A key part of the strategic land use planning process will be to identify strategic agricultural land and associated water and ensure that it is protected from the impacts of development."* (Premier O'Farrell, NSW Liberals and Nationals Strategic Regional Land Use (SRLU) Policy 2011).

(b) *"Strategic agricultural land is a finite resource that must be conserved into the future to ensure future food security. It will be identified using a triple bottom line assessment of the environmental, social and economic characteristics of the area."* (NSW Liberals and Nationals SRLU Policy 2011)

(c) "*Major mining and coal seam gas proposals on [high-quality agricultural] land will only be able to be considered if they are able to meet strict criteria as assessed by an independent panel of experts that will operate at arm's length from government*." (Premier O'Farrell)

(d) *"I can assure the member that we intend to protect all areas of high conservation value through the process that we are developing."* (Minister Hazzard in Parliament, speaking on the Strategic Regional Land Use Policy, 25th November 2011).

History of Project Application

3.8 We wish to indicate to the Department the following relevant factors in relation to the assessment of the project thus far.

3.9 Firstly, despite Anglo's repeated assertions that it has *'consulted with stakeholders'* (assertions made frequently in the EA), Coolmore was not provided with an opportunity to comment on the Preliminary Environmental Assessment before it was submitted to the Department in 2011. This denied Coolmore the opportunity to be involved in important initial planning for the project. In Coolmore's view, the contentions made by Anglo that stakeholders have been involved throughout the mine plan process are to be treated with caution.

3.10 Secondly, Coolmore were of the understanding that prior to the lodgement of the EA, the Department of Planning and Infrastructure directed Anglo to remove any visual intrusion in Coolmore's visual catchment area. It has therefore come as a great surprise to Coolmore that three options for the Houston Visual Bund (each with significant visual impacts) are in fact being proposed by the EA.

Recent applications

3.11 The environmental impacts of coal mining on the thoroughbred horse breeding industry in the Hunter Valley have been recently considered by the Planning Assessment Commission (**PAC**). The PAC refused planning approval in respect of the Bickham Open Cut Mine at Scone in May 2010.

3.12 It is relevant to note that in relation to the impacts of coal mining on thoroughbred horse breeding operations, the Bickham Report prepared by the PAC made several points including:

(a) the horse breeding industry in the Hunter is based on the international reputation that the Hunter has acquired for producing premium quality stock;

(b) there is a strongly held view in the industry that this production capacity is based on key environmental attributes including clean air, clean water and green rolling hills;

(c) the breeding companies in whose hands the top breeding stallions are concentrated are potentially very mobile, and, should they decide to move, would move offshore; and

(d) New Zealand is already making inroads into key export markets on the back of the Australian equine influenza outbreak and would seize on any other opportunities to weaken Australia's thoroughbred reputation.

3.13 The Bickham PAC Report concluded:

> *"The Commission's view is that the structure of the industry, the obvious importance of reputation, and the existence of viable alternatives makes the industry very vulnerable to threats based on image. The Commission accepts that*

introduction of coal mining to the Upper Hunter Valley could pose such a threat and that open-cut coal mining and a viable international thoroughbred breeding enterprise are probably incompatible land-uses. Given the size and importance of the thoroughbred industry, an experiment to 'test' the extent of this vulnerability is not recommended without a comprehensive study of both the economics and the risks."

"The thoroughbred industry in the Upper Hunter Valley is a very significant contributor to the regional, state and national economies and a major source of employment. The structure of the industry makes it particularly vulnerable to threats based on image and the introduction of coal mining to the Upper Hunter Valley is strongly identified as such a threat. The available evidence supports the view that open-cut coal mining and a viable international-scale thoroughbred breeding enterprise are incompatible land-uses."

3.14 The concerns raised by the PAC apply to open cut coal mining proposals such as the proposed Drayton South mine. This is particularly so considering that many of the major horse breeding operations affected by the Bickham project were located approximately 25km away. In this case, Coolmore is approximately less than 1km away from the project boundary and mining operations.

4. Merit issues with EA

4.1 Coolmore is of the view that the EA is manifestly deficient in its assessment of the environmental impacts proposed by the Drayton South Project. It is also of the view that the impacts described in the EA are unacceptable. We provide further detail below.

Visual impacts

4.2 The Drayton South coal mine, in particular, the Houston Pit and its associated over-burden dump (bund) proposes the transformation of an untouched natural valley into an industrial landscape with adverse visual impacts on Coolmore, its clients, tourists travelling on the Golden Highway, the residents of Jerrys Plains and the 100 permanent residents that live on the Coolmore property.

4.3 The Visual Impact Assessment prepared by Hansen Bailey fails to adequately assess the importance of the visual impacts of the proposed Drayton South project on the Coolmore property, its sensitive business operations and its 100 permanently resident staff.

4.4 We have extracted the relevant statements in the EA in relation to the visual impacts of the Project on Coolmore's operations. Coolmore responds as follows:

(a) *It is recognised that scenic and landscape diversity of the region form a resource base for tourism and associated agricultural pursuits such as viticulture and thoroughbred horse breeding* (p 203).

Response: Coolmore agrees with this statement. The overall scenic value of the area to tourism and the local community must be given significant weight in the assessment of the Project Application. The highly scenic nature of the valley is immediately apparent to any visitor driving along the Golden Highway through this area. The Hunter River meanders through a green and lush river valley set within a backdrop of spectacular forested ranges to the south (the World Heritage listed Wollemi National Park) and an undulating ridgeline of grazing paddocks to

the north. Visual amenity is a critical determining factor underpinning the concentration of thoroughbred breeding investment in the Hunter Valley region. The visual landscape setting is central to the presentation and operation of Coolmore's business and we are highly sensitive to any impacts on the visual environment, especially in the context of open cut mines.

(b) *The Coolmore Horse Stud presents irrigated grazing lands and distinctive timber post and rail fences and stockyards which, from the Golden Highway, creates an attractive rural landscape with high visual appeal* (p 202);

Response: Coolmore is of the view that the property has a very high visual appeal. This view is supported by photographic evidence at Annexure B and the visual impacts report at Annexure C.

(c) *The visual impact assessment concluded that the visual impact on surrounding receivers will be limited for the majority of the mine life. This is because the operational areas of the Project have been designed to remain behind the existing topography in order to conceal them from views at the most sensitive locations to the south* (p xiv).

Response: Coolmore disagrees with the conclusion of the visual impact assessment. As currently proposed, the visual impact of the Project on Coolmore will be unreasonably high and significant for the majority of the mine life. This view is detailed below and is supported by the visual impacts report at Annexure C.

(d) *The exception is the views that will be available to the Houston Visual Bund while it is being constructed. The Houston Visual Bund is required to ensure that longer term views to the operational areas of the project are screened from view. Receivers located to the south of the project, including residences within Jerry's Plains, parts of Coolmore Stud and motorists on the Golden Highway would experience views of the Houston Visual Bund while it is being constructed. During this time (estimated 16 months) the visual impacts for these areas would be high. These impacts would be reduced as rehabilitation is completed (p xiv) (p 203).*

Response: Coolmore is of the view that the visual impact of the Houston Bund represents significant and adverse visual intrusion. A 77m high emplacement of overburden (page 76) in the visual catchment area of Coolmore is a new, significant and unnatural feature in the landscape. The estimate of 16 months is conservative at best and in Coolmore's view it will take a significantly longer period for the bund to commence blending into the surroundings. It will remain a perpetual and irreversible impact in the visual catchment area. Accordingly, the Houston Bund will have an unreasonable impact on the presentation and operation of our business.

(e) *A visual bund will be constructed in the foreground of the Houston mining area to shield views of operations when the Houston and Whynot mining areas from receivers to the south. The Houston Visual Bund has been designed in consideration of feedback received as part of consultation with neighbouring stakeholders, particularly Coolmore Australia, through a series of working group meetings that have been ongoing in the planning phase of the project* (p 76).

Response: As indicated in further detail below, Coolmore is of the view that the consultation that has been carried out by Anglo has been ineffective in reaching an

appropriate solution to minimise visual impact issues. Anglo stated at a meeting with Coolmore on 27 February 2012 that they would not consider any further bund alternatives and that the proposed bund was their final and preferred option.

Coolmore has commissioned John Dwyer, a mining engineer with 25 years experience to , to assess if alternative bund options could have been considered. John has concluded that there is another bund option which is far superior, does not involve the sterilisation of significant resources and yet may offer some mitigation of the visual impacts on Coolmore.

(f) *Once constructed, the Houston Visual Bund adds to the effect of the existing ridgeline in shielding views from all of the sensitive viewing locations on Coolmore Stud during the remaining years of the project (p 219). After this, visual impact will reduce to moderate and then low, reflecting decreasing visual effect levels* (p 219).

Response: It is difficult to understand how a pile of overburden can *'add to the effect of an existing ridgeline'*. Coolmore is of the view that a 77m high emplacement of overburden in the visual catchment area of Coolmore is a new, significant and unnatural feature in the landscape. It will not have a moderate or low visual impact during the project. This view is supported by the visual impacts report at Annexure C.

(g) *Tree screens have been established on the Golden Highway and will be planted along the ridgeline adjoining the Houston Visual Bund to minimise views of the project from various vantage points. These tree screens will be planted prior to and during the construction phase to allow for substantial growth and to maximise the opportunity for establishment* (p 76).

(h) **Response:** Coolmore is of the view that the tree screens are far too premature to significantly obscure views of the Project. This view is supported by the visual impacts report at Annexure C.

(i) Viewpoint DSO8 Batty Hill is of "*high sensitivity, being a lookout point on the Coolmore Stud where visitors are taken for an overview of the property*" (p 215).

Response: It is extremely important to the presentation and business operation of Coolmore that adverse visual impacts are negligible from this viewpoint.

(j) *The visual impact on Coolmore Stud is also limited* (p 219) *The project will not have a significant loss of scenic and landscape values* (p 342).

Response: For reasons outlined above and at Annexure C, these statements are inaccurate.

4.5 We also refer to figures 50 – 54 in the EA. We are of the view that the representation of the Houston visual bund is misleading in these figures. Clearly, a large 77m high overburden emplacement area will be a discordant figure in the landscape particularly during and immediately after construction. The representation of these emplacement areas (particularly the natural green colour during the years of construction) is clearly inaccurate and misleading in order to support the view that visual impacts are minimal.

4.6 The critical findings of the Visual Impacts Report prepared by Michael Wright (visual impacts expert) and provided at Annexure C are as follows:

(a) The landscape to the West of Jerrys Plains village is currently untouched by mining. Rather, it is a highly scenic gateway to the Upper Hunter Valley comprising the immaculately maintained property of Coolmore Australia, the Hunter River and its irrigated floodplains and undulating hills and ridges. The Golden Highway, the main west/east road connecting Dubbo to Newcastle, runs through this impressive landscape;

(b) The visual catchment for Coolmore is highly scenic; comprising the Hunter River and the adjoining irrigated floodplain meandering through undulating hills and ridges, with a forested mountain range, Wollemi National Park, to the south which creates a prominent and attractive backdrop to the area;

(c) The high quality of this scenic landscape immediately south of the proposed mine site needs to be attributed with the highest levels of sensitivity when considering the visual impacts of the mine activities in the valley;

(d) The visual quality of the landscape both in and around thoroughbred breeding studs is of paramount importance to the business model of this industry. Not only is the presence of highly productive land with good soils and ample water of fundamental importance to these studs, but the physical appearance of the property and the surrounding landscape is also a critical issue in the siting and ongoing operation of these businesses;

(e) The presentation of the Coolmore stud is commensurate with its standing as one of the premier thoroughbred breeders in the world;

(f) Coolmore is a highly sensitive visual environment, particularly in the context of an open cut mine. Coolmore's clients wish to see a property which has "*nothing out of place*". However an open cut mine anywhere within the property's viewshed, will most certainly be "*out of place*";

(g) A large earth bund, 77 metres high and 1.75 kilometres long, is proposed to screen the open cut mine workings in the Houston Pit. During its construction and prior to the establishment of the vegetation, the bund will be continuously visible to a wide visual catchment in the alley over a 16 month period. The combination of the very high visual effect of coal mines and the very high visual sensitivity of the thoroughbred studs such as Coolmore, will inevitably result in a very high visual impact whenever the mining activities are visible;

(h) The bund is the length of two and a half Sydney Harbour Bridges, and the height between the Sydney Harbour Bridge platform and its peak;

(i) The thoroughbred breeding industry and the open cut coal mining industry are potentially one of the most incompatible combinations of land uses to share a common landscape. The critical importance of the visual landscape to a thoroughbred breeding operation indicates that every possible measure to avoid the visual impacts of open cut mining needs to be implemented in order to ensure the ongoing viability of the property and its business; and

(j) Whilst it would not result in Coolmore supporting the project, the implementation of Option 4 as described in the report prepared by John Dwyer (consultant mining engineer) would significantly reduce the adverse impacts of the Houston bund.

4.7 Accordingly, Coolmore is of the view that the visual impacts associated with the Project Application are totally unacceptable and that Anglo have not adequately consulted with

Coolmore in relation to the Houston Bund. As demonstrated at section 5 of this submission, following some preliminary work by our expert consultants, it appears that there is a feasible and less visually intrusive alternative available which we have entitled "*Option 4*". Coolmore notes that even if Option 4 is implemented, it would still object to the project in the strongest terms. However, if the project was to proceed, in Coolmore's view the implementation of Option 4 would operate to address (better than Option 3) the adverse visual impacts on Coolmore's operations..

Groundwater

4.8 A preliminary review of the EA carried out by Gilbert & Sutherland in relation to groundwater impacts has revealed several serious inadequacies in relation to the description of these impacts in the EA. We have extracted the relevant statements in the EA in relation to the impacts of the Project on groundwater. Coolmore's response is as follows:

(a) *The alluvial deposits of the Hunter River located to the immediate south of the Drayton South area are a significant storage for groundwater, particularly within the basal gravel sequence and overlying sands…The Hunter River plays an important role in the operation of the region's mining and power generation industries and in irrigating Coolmore Stud and several other agricultural enterprises in the area* (299).

Response: Coolmore agrees with these statements.

(b) *The zone of influence for the shallow regolith/alluvium is predicted to be restricted to the immediate vicinity surrounding the mining areas. This is a maximum distance of approximately 600 metres to the west and south of the mining areas in Year 27. The zone of influence is not predicted to extend into the Hunter River alluvial aquifer, however it is predicted to extend marginally into the Saddlers Creek alluvium* (xix).

Response: The EA fails to acknowledge that groundwater impacts resulting from the proposal are likely to be compounded by the impacts from adjacent mining properties. The preliminary expert report prepared by Gilbert & Sutherland suggests that re-activation of Saddlers Pit at Mt Arthur Coal Mine is expected to influence groundwater levels in the Saddlers Creek alluvium.

(c) *The groundwater model predicts that inflows will vary throughout the mine life which is directly related to the design of the Mine Plan. As mining progresses and enters into a new strip, groundwater inflows will rise, followed by a gradual reduction in inflows* (300).

Response: Coolmore is heavily reliant on groundwater for the irrigation of pastures and for the flow of groundwater into surface water bodies and in the vicinity of the property including a lagoon and the Hunter River. Any reduction of inflows are of great concern, representing a significant impact to Coolmore

(d) *Seepage flux of saline groundwater contained in coal measures can result in pockets of variably saline quality groundwater in the Hunter River alluvium* (307).

Response: As indicated above, Coolmore is heavily reliant on groundwater. The production of saline groundwater is of great concern as it is likely to cause a significant groundwater impact.

(e) *The project is predicted to have only very limited leakage impacts on the alluvial lands associated with the Hunter River* (xix).*The groundwater quality within the Hunter River alluvium is not expected to measurably change as a result of the project* (xix). *Groundwater within the coal measures is predicted to continue to discharge into the Hunter River alluvium at a rate similar to pre-mining conditions. The project will not have any measurable impact on the Hunter River alluvial aquifer. Therefore the project will not result in impacts to highly productive groundwater* (307).

Response: We are of the view that this conclusion is questionable given that the groundwater impact assessment at Annexure N of the EA states that the model is *'likely to underpredict the amount of upward leakage'*. These two statements are difficult to reconcile.

4.9 The preliminary expert report prepared by Gilbert & Sutherland makes the following relevant findings:

(a) A Groundwater Numerical Model formed the basis upon which a groundwater impact assessment for the proposal and conclusions were founded in the EA. No independent peer review of the model is reported in the EA. There are a number of perceived deficiencies in the Groundwater Numerical Model that require justification or clarification before the results can be relied upon for any predictive purpose;

(b) A crucial omission from the EA is a clear explanation of [the] model's integration with surrounding existing impacts. This is of particular importance given that there are cumulative impacts from existing operations at Drayton North. The EA fails to acknowledge that the groundwater impacts resulting from the proposal are likely to be compounded by the impacts from adjacent mining projects. Re-activation of Saddlers Pit at Mt Arthur Coal Mine is expected to influence groundwater levels in the Saddlers Creek alluvium.

(c) The baseline monitoring for this proposal has been insufficient. This is true both spatially and temporally, so much so that it compromises the model's treatment of ambient groundwater conditions including depressurisation, groundwater qualities and the quantification of leakage (both potential and actual) from the alluvial aquifers;

(d) The groundwater monitoring proposal does not clearly integrate and consolidate all of the disparate monitoring, including on adjacent leases, say, within the assessed impact radius of 4km. The water quality results should be assessed against the *ANZECC Guidelines for Fresh and Marine Water Quality* (2000), not the *NHMRC Australian Drinking Water Guidelines* (2004);

(e) A questionable outcome of the Groundwater Numerical Model is the prediction that the depressurisation zone will have *"very limited leakage impacts"* to the Hunter River alluvial aquifer, given that the report also states that the model is *"likely to under-predict the amount of upward leakage"* into the Hunter River alluvium. These two statements are difficult to reconcile; and

(f) The EA's inconsistencies in reporting and issues with sampling associated with stygofauna in groundwater are of concern. For Coolmore in particular, the proposal has the potential to reduce groundwater quality due to the removal of stygofauna.

4.10 As a result of these deficiencies, it is Coolmore's view that the EA is inadequate and does not properly take into account the groundwater impacts of the project on Coolmore's operations.

Surface water

4.11 Coolmore is of the view that the EA is manifestly deficient in its assessment of the surface water impacts of the proposal. We have extracted the relevant statements in the EA in relation to the impacts of the Project on groundwater. Coolmore's response is as follows:

(a) Figure 32 indicates that the discharge pipelines will be discharging water from the mine into the Hunter River directly adjacent to Coolmore's operations. Page 289 states that: "*A water supply and discharge pipeline to the Hunter River, which will be linked to the Houston Dam. Water in excess of site use will be released directly to the Hunter River under the HRSTS via the discharge pipeline* ". Page 296 states "*A pipeline outlet will be designed and constructed to minimise erosion of the Hunter River during releases and to prevent the build-up of debris carried by floodwater.*"

Response: In Coolmore's view it is inappropriate for the discharge point to be located directly adjacent to Coolmore's operations. No consideration is given to the impacts of salinity to Coolmore, particularly during dry weather. In addition, unregulated flows would impact on Coolmore and the impacts on Coolmore and the surrounding environment are unknown.

(b) *The main mine water storages, including the mine access road dam, Savoy Dam, Houston Dam and South Boyd, will not spill over the life of the project* (293).

Response: As indicated above, unregulated flows may impact on Coolmore (including overland flow) however the impacts on Coolmore and the surrounding environment are unknown and are not discussed by the EA in any detail. Such unregulated flows could have an adverse impact on Coolmore's operations.

4.12 The critical findings of the preliminary surface water report prepared by Gilbert & Sutherland are as follows:

(a) The reported water balance modelling fails to provide justifiable bases for the conclusions drawn in the report. The probabilistic values reported are not statistically valid and the forms of analyses are potentially misleading. The values reported do not support the interpretation of the results provided;

(b) None of the runoff and recharge parameters of water quality assumptions adopted within water balance modelling were subjected to meaningful sensitivity testing. Without these sensitivity analyses, the relative effects of individual parameters remains unknown;

(c) In terms of mine water management, the design of the dirty water system (i.e. surface water runoff from areas that are disturbed by mining operations, such as overburden and haul roads) relies on the discharge of captured water wherever possible, on the basis of water quality. These captured waters and their associated water quality criteria are problematic when both storages and criteria are exceeded;

(d) The EA states that *"runoff must be managed to ensure that downstream water quality is within the adopted water quality compliance criteria",* yet fails to define one specific discharge criterion, relying on licence conditions.

(e) The potential implications for the long-term impacts of this salinity on the Hunter River and other water users (of both surface water and groundwater) in the area are also unknown;

(f) The EA's discussion of licensed water users or "*basic landholder rights*" is limited to the selected quoting of various sums of water from the Water Sharing Plan. No consideration is given to those water users that may be impacted, nor does the EA indicate the location of characteristics of any potentially impacted users, enterprises or sensitive receiving environments. These users clearly include Coolmore;

(g) the EA fails to discuss the relative values of the local watercourses from commercial, aesthetic and ecological perspectives. In respect of the requirement to obtain unregulated water access licences as a result of the proposal, the EA is vague.

(h) the information is so lacking in the EA that the potential interception of overland flow, the potential impacts on the existing unregulated river access and the effects on the proposal of not securing the requisite licences are simply not considered to any meaningful degree.

4.13 As a result of these issues, it is Coolmore's view that the EA does not properly take into account the surface water impacts of the project, or relate them to Coolmore's operations.

Noise, blasting and vibration

4.14 Coolmore notes that 5 blasts per week would be required to support the proposed production rate of the project. That equates to almost a blast every weekday. For thoroughbred breeding studs located directly opposite this proposed coal mine, and the communities of people and families who live on those studs, and the valuable livestock on these properties this continual process of blasting will be highly intrusive, damaging and plainly an untenable situation to endure for any period of time.

4.15 The implication in the EA that either people or livestock would or should become desensitised to blasting and vibration over time is flawed. It represents a cavalier attitude to what the communities of people residing close to this mine should be expected to tolerate and live with.

4.16 We have extracted the relevant statements in the EA in relation to the impacts of the Project in relation to noise, blasting and vibration. Coolmore's response is as follows:

(a) *There are nine Drayton Mine receivers that will experience mild noise impacts at residences and one receiver that will experience mild noise impacts over an area greater than 25% of the property* (x);

Response: The EA should (but does not) expressly indicate that Coolmore is the relevant receiver that will experience these noise impacts. Noise impacts over an area greater than 25% of the property are of concern to Coolmore. There is the potential for disturbance to thoroughbreds, particularly during the sensitive breeding stage. Noise impacts are also inconsistent with our business operations and would be extremely inappropriate during client visits.

(b) *The noise impact assessment determined that noise levels will not exceed 40dBA on any part of Coolmore Stud (xiii). It was determined from the literature review that horses exposed to noise levels in the range of 54 to 70 dBA would be unlikely to exhibit signs of distress* (xii).

Response: It is relevant to note that the literature review referred to was not independent or based on any peer reviewed scientific research. We are of the view that noise levels in the range of 54 to 70 dBA are also inconsistent with our business operations and would be extremely inappropriate during client visits.

(c) *Overpressure levels from blasting (when closest to the receiver) are predicted in the range of 93 to 109 dBL for indicative locations on Coolmore Stud (xiii). As mining progresses southwards it is likely that horses will have developed an increased tolerance to blasting due to habitation;*

Response: We are of the view that overpressure levels from blasting (when closest to the receiver) which are predicted in the range of 93 to 109 dBL are also inconsistent with our business operations. No evidence is provided that horses will develop an increased tolerance to blasting over time, nor is this an acceptable assumption. In addition, overpressure levels from blasting would be extremely inappropriate during client visits.

(d) *Some activities, including blasting and the operation of particular equipment on exposed surfaces will be constrained to daylight hours to avoid adverse noise and vibration impacts as required. Blasting in particular will only be undertaken during the hours of 9am to 5pm on Monday to Saturday inclusive* (84).

Response: as referred to above, our business operation and thoroughbred horses are highly sensitive to noise and vibration and our clients and visitors to Coolmore are highly sensitive to the quality of setting of the Coolmore establishment. The noise and vibration impacts caused by blasting (and the operation of equipment) is unacceptable to Coolmore, particularly during daylight hours.

(e) *Anglo-American will consult with the neighbouring mines to ensure that blast events from adjoining operations would not occur simultaneously* (199).

Response: in Coolmore's view, any significant blasting impacts are unacceptable and will result in serious impact on the business.

(f) *The horses exhibited little response to the music noise, except where the noise was of an alarming character or accompanied by visual stimuli* (204).

Response: this statement should be treated with caution because it relates to the impacts of music on racehorses and livestock. Further, any conclusions need to have a sound evidentiary basis and be grounded in scientifically based research rather than anecdotal material.

(g) *Noise levels will not exceed 40dBA on any part of Coolmore Stud. For the majority of these properties, noise levels of 30 to 33dBA are predicted, which is comparable to the measured background noise level* (206)… *Overpressure levels from blasting are predicted in the range of 93 to 108dBL for indicative locations on Coolmore Stud* (206).

Response: as referred to above, clients and visitors to Coolmore are highly sensitive to the quality of setting of the Coolmore establishment. The estimated

noise and blasting impacts will be clearly perceivable beyond background levels and are of particular concern during daylight hours.

4.17 The critical findings of the preliminary report prepared by Bridges Acoustic are that the Drayton South EA:

(i) does not adequately address worst case noise assessment scenarios,

(ii) fails to assess actual noise exposure at affected receiver locations for rail noise assessment,

(iii) factors in approvals for noise levels on rail which should not be included an could have potential impacts on noise exceedences;

(iv) excludes any assessment of blasting overpressure on horses (despite acknowledging in the EA that at its peak noise levels would generally be considered unsettling for horses);

(v) is based on an "assimilation" of a gradual increase of noise over time which should not be relied upon as the basis for acceptability of response to blasting overpressure noise.

4.18 It is Coolmore's opinion that the EA does not properly take into account the noise impacts of the project. Those impacts that are described are unreasonably adverse and unacceptable.

Dust and equine health

4.19 Coolmore is disappointed that the assertions made in the EA regarding dust and equine health are not supported by any independent, peer reviewed research and appear to be assertions based on anecdotal evidence and first person observations by consultants employed by the proponent. The literature review relates to studies of hay dust on thoroughbreds and does not relate to dust emanating from soil. Accordingly, it is Coolmore's view that the findings in the EA are to be treated with caution and do not meet the requirements in the DGRs.

4.20 We have extracted the relevant statements in the EA in relation to the impacts of the Project in relation to dust. Coolmore's response is as follows:

(a) *The air quality assessment found that the average cumulative PM10 concentrations resulting from the Project will meet the regulatory criteria of 30ug/m3 at all locations on the Coolmore Stud. Even under a worst case scenario when considering the maximum predicted 24 hour average, the predicted levels will reach 52ug/m3 for one day in Year 10 at Coolmore* (xii) (204)

Response: air quality is a significant issue for Coolmore. Recent reports published in the Newcastle Herald found that there had been over 200 air quality breaches of national and international air quality standards in 2012. The estimated levels of increased dust resulting from the project are of concern to Coolmore. The lack of TSP and PM10 records raise serious doubts as to the veracity of the findings in the EA.

(b) *Particulate matter is 'merely an irritant'* (xii)

Response: the finding that particulate matter is *'merely an irritant'* to thoroughbreds does not have a sound evidentiary basis and is not grounded in scientifically based research. Considering the value of Coolmore's breeding operations to the local and State economy, any proposed additional impacts to the respiratory systems of our stock must be supported by independent, peer reviewed research.

(c) *The results from the dispersion modelling indicate that the project considered alone (and cumulatively with other sources) is predicted to contribute to exceedances of the annual PM_{10} and TSP air quality criteria at the receivers summarised in Table 31… Private receivers that are predicted to experience exceedances of the assessment criterion over the life of the project are shown in Table 31* (167).

Response: Two of the receivers indicated in table 31 are on Coolmore property. Considering the sensitivity of Coolmore's operations, this information should have been made expressly clear at page 167, and otherwise appears to be deliberate obfuscation. It is also worth noting that the proponent's own modelling predicts air quality exceedences on Coolmore land.

(d) *There was very little published information about the equine health impacts of dust originating from the soil* (200).

Response: Considering that the dust emanated by the project is from the soil, it is difficult to determine the utility of a literature review carried out by the proponent that does not deal with soil related dust.

(e) *Despite exposure to high levels of dust, horses can compete to the best of their ability.*

Response: This conclusion is not based on research relating to dust from soil. The literature review does not account for the effects of dust on overall health of horses, nor does the literature review deal with the increase in dust and the ramifications for our sensitive business operations.

(f) *Dust that does not have high levels of endotoxin does not appear to increase the incidence of inflammatory airway disease in horses*.

Response: Again, this conclusion is highly questionable and should be treated with caution because it is not based on research relating to dust from soil.

4.21 Some of the critical findings of the preliminary report prepared by our expert Dr Andrew Paxton-Hall, Veterinarian, are:

(a) Extraneous light is a potential environmental issue for breeding equines. Light of sufficient strength and duration could affect breeding animals if not controlled;

(b) Foals' susceptibility to dust of all types needs to be established, especially in a paddock situation, as research is limited. Many of the animals on a breeding property are foals;

(c) Noise and vibration from mining could affect horses. Horses may be susceptible to explosion noise. Given that the equine population on a breeding stud is fluid, assumptions regarding desensitisation over time to mining effects may be just that and individual differences may be an issue.

4.22 Considering the value of our bloodstock and the time spent by the proponent planning the project, the failure to carry out a proper study in relation to the effects of soil dust on thoroughbreds is unacceptable.

Agricultural and economic impact

4.23 The Agricultural Impact Statement prepared by the proponent is manifestly inadequate and does not consider, in any meaningful way, the impacts of the project on *'Strategic Agricultural Land – Equine Cluster,'* the area of land that Coolmore falls within.

4.24 We have extracted the relevant statements in the EA in relation to the impacts of the Project on agricultural land and the local economy. Coolmore's response is as follows:

(a) *The predominant agricultural land use within the Drayton South area is extensive beef cattle grazing, with the major enterprise being beef cattle breeding for the weaner and domestic market. Several other agricultural enterprises operate within the locality of the Drayton South area, including Coolmore Stud* (xxi)

Response: In terms of economic value and land use, the predominant agricultural use in the area of the mine is clearly thoroughbred horse breeding, indicated by the two multi-million dollar breeding operations within 1km of the project boundary (Coolmore and Darley). Any suggestion otherwise is fundamentally misinformed at best, and at worst deliberately misleading.

(b) *The gross value of current agricultural production within the Drayton South area is $701,208 per annum and the net value is $432,479 per annum* (xxi)

Response: this finding may be correct within the Drayton South project area footprint, but it does not take into account the gross value of agricultural activities on nearby thoroughbred horse breeding operations such as Coolmore. Indeed, the entire agricultural impact statement ignores this issue.

(c) *The project is not anticipated to have significant impacts on availability of land for agricultural purposes, including land utilised by the thoroughbred horse breeding industry and biophysical strategic agricultural land, water supply including highly productive groundwater, long-term visual amenity of surrounding enterprises* (xxii).

Response: Coolmore strongly disagrees with and challenges this finding. This comment demonstrates that the author of the report does not understand the impact the project will have on Coolmore in terms of visual impacts, reputation, and operations.

(d) *Assess the current and maximum agricultural potential for each agricultural domain in terms of the quantum, gross value and net value of production*

Response: the agricultural impact statement does not assess the economic value of the breeding activities carried out by Coolmore and is therefore fundamentally flawed.

(e) *The project will not lead to significant impacts on the equine and viticulture CIC through a loss of scenic and landscape values. The visual impacts associated with the project on sensitive receivers to the south will be relatively short-term in nature, with all major project components including mining areas and OEAs being designed to remain behind the existing southern ridgeline and out of view.*

Response: Coolmore strongly disagrees with and challenges this finding. The placement of overburden on the southern ridgeline (referred to by the proponent as the Houston visual bund and associated works) will be clearly visible during construction and will have permanent and irreversible impacts on the visual amenity and reputation of Coolmore. The southern ridgeline will be permanently altered.

4.25 The Agricultural Impact Statement contained in the EA was reviewed by Dr Phil Matthew, Principal Agricultural Scientist at Gilbert & Sutherland. This report found that the agricultural impact statement is inadequate having regard to the formal requirements as published in the *Guideline for Agricultural Impact Statement* published by the Department of Planning and Infrastructure (March 2012). This is because:

(a) the focus of the agricultural impacts is on the site itself and the offset site, with a cursory examination of the surrounding properties and consequently the report fails to meaningfully address the issues that should be addressed.

(b) the report does not comply with the requirements of an agricultural impact statement, for example it does not contain:

(i) any analysis of Coolmore's operations;

(ii) a detailed description of soil characteristics including soil types and depth;

(iii) a description of water resources and other users extraction locations; or

(iv) project alternatives for mine design.

(c) the economic analysis does not address the impacts on the neighbouring farms with most of the assessment based on the site and the off-set site.

4.26 As a result of these deficiencies, it is Coolmore's view that the EA does not properly take into account the impacts of the project on Coolmore's operations.

Consultation

4.27 The EA refers to "*ongoing communication between parties*" and the "*provision of an opportunity for stakeholders to have input into the planning of the project*" (viii). It also makes the following additional relevant comments:

(a) *Anglo-American will also conduct ongoing consultation with stakeholders surrounding the site over the life of the project. Should any issues arise in relation to visual impacts on surrounding sensitive viewing locations, these will be addressed through consultation with relevant parties* (xiv).

Response: As indicated by the report prepared by John Dwyer and provided at Annexure D, whilst it is not satisfactory, there is a clearly superior solution available to the proponent in terms of the Houston visual bund. It is Coolmore's considered opinion that consultation is incomplete on this issue.

(b) *The Mine Plan for the Drayton South area has been developed with consideration to the existing environment and key local stakeholders seeking to minimise, as far as practicable, the visibility of the mine from neighbouring properties* (45)

Response: Coolmore is of the view that this statement is misleading. The Houston visual bund does not minimise (as far as practicable) the visibility of the mine from neighbouring properties because there is a far superior solution as indicated at annexure D.

(c) *One of Anglo-American's key objectives when developing the Mine Plan for the project was to reduce the visual impacts of the mine on sensitive receivers located to the immediate south including Coolmore Australia, Darley Australia, the existing Arrowfield Estate and the village of Jerry's Plains. The preferred location and design of the visual bund was then developed following consideration of stakeholder feedback* (104)

Response: It is Coolmore's considered opinion that consultation is incomplete on this issue.

4.28 In light of the above, it is clear that the consultation on the part of the proponent with surrounding stakeholders has been inadequate. It is Coolmore's view that the proponent should be directed to amend the design of the Houston visual bund in order to entirely shield and protect Coolmore's operations from unacceptable visual impacts, including those of their over-burden dump.

Land Use

4.29 The EA makes general assertions about the historic land use in the vicinity of the project application boundary. It is Coolmore's view that the below statement requires correction:

(a) "*Prior to the emergence of Coolmore Australia and Darley Australia in the region, there were existing coal mining operations at Drayton Mine, Mt Arthur Coal Mine, Hunter Valley Operations Coal Mine and Wambo Coal Mine, as well as operations at the Bayswater and Liddell Power Stations* (12)."

Response: this statement is deliberately misleading. Thoroughbred horse breeding has been carried out on Coolmore land since the 1900's. The property has a long history of successful thoroughbred horse breeding prior to its more recent ownership by the Arrowfield Group in 1986 and later Coolmore Australia. Between 1910 and 1924, the property was owned by the Moses Brothers. During their tenancy, a number of quality thoroughbred racehorses were bred by the Moses Brothers at the property including the great racehorse and Champion sire Heroic, as well as Melbourne Cup winner Poitrel.

The Drayton South Project is the first major intrusion of coal mining operations into the direct vicinity of Coolmore land. The Drayton Mine, Mt Arthur Coal Mine, Hunter Valley Operations Coal Mine and Wambo Coal mines are several kilometres away, well outside the visual and noise catchment of Coolmore.

5. Mitigation of impacts

5.1 In Coolmore's view, there are measures that should have sensibly been incorporated into the mine design in order to minimise impacts on surrounding receivers. It is indicative of the overall deficiencies in the EA that these measures have not been incorporated by the proponent. One example is "Option 4" for the Houston visual bund. In any event, Coolmore wishes to note that the incorporation of the measures described below would not produce a satisfactory outcome for Coolmore. However, implementation of Option 4 would reduce adverse impacts on Coolmore's operations to a significant extent.

Visual impacts

5.2 Annexure D contains a report prepared by John Dwyer, a mining engineer employed in the mineral and coal industry for over 40 years. It indicates the unsatisfactory nature of the consultation between Coolmore and Anglo and describes an alternative, potential bund location and a further option, (Option 4) which has been developed by Coolmore.

5.3 Coolmore considers that Option 4 is a vast improvement on the visual bund options presented in the EA. Option 4 has the following characteristics in comparison to Option 3 (the current design in the EA):

(a) a similar height (72m versus 77m);

(b) a substantially smaller footprint and volume;

(c) a much shorter timeframe during which critical visual impacts are evident;

(d) a minimal reduction of strike length available for high wall mining and does not sterilise large amounts of coal (estimated at less than 1% overall for the project).

5.4 Considering the statement in the EA that primary objective of the proponent "*was to develop a mine plan that minimised potential environmental and social impacts while maximising resource recovery and operational efficiency,*" it is imperative that amendments to the mine plan are made. It is Coolmore's view that Option 4 is a more environmentally sensitive and economically efficient alternative.

5.5 Coolmore requests the Department of Planning and Infrastructure to direct Anglo to investigate Option 4 as an alternative to the Houston Bund designs in the EA. It is a substantial improvement for the Houston pit bund design and should be adopted by AAMC before any further detailed mine planning is embarked upon.

Ground and surface water

5.6 As noted above, the EA is deficient in its assessment of the surface and ground water impacts of the proposal. In order for the ground and surface water impacts to be acceptable to Coolmore, the proponent must demonstrate that:

(a) the risks associated with this proposal are not unacceptably high,

(b) the impacts have been adequately assessed, and

(c) the impacts have known and acceptable consequences for the Hunter Valley's already highly stressed water systems.

Noise and blasting

5.7 We have described above the business model and sensitive operations carried out at Coolmore. In order for the noise and blasting impacts to be acceptable to Coolmore, the proponent must demonstrate that that the Drayton South Project involves no measurable increase in background noise levels.

Dust

5.8 We have noted above our concerns in relation to dust and equine health. In order for these impacts to be acceptable to Coolmore, the proponent must demonstrate that that the Drayton South Project involves no measurable increase in background dust levels.

Coolmore objects to the Drayton South Project because the EA is manifestly deficient in its assessment of environmental impacts, and the impacts described are unacceptable for a highly sensitive, multi-million dollar thoroughbred horse breeding operation to have to contend with.

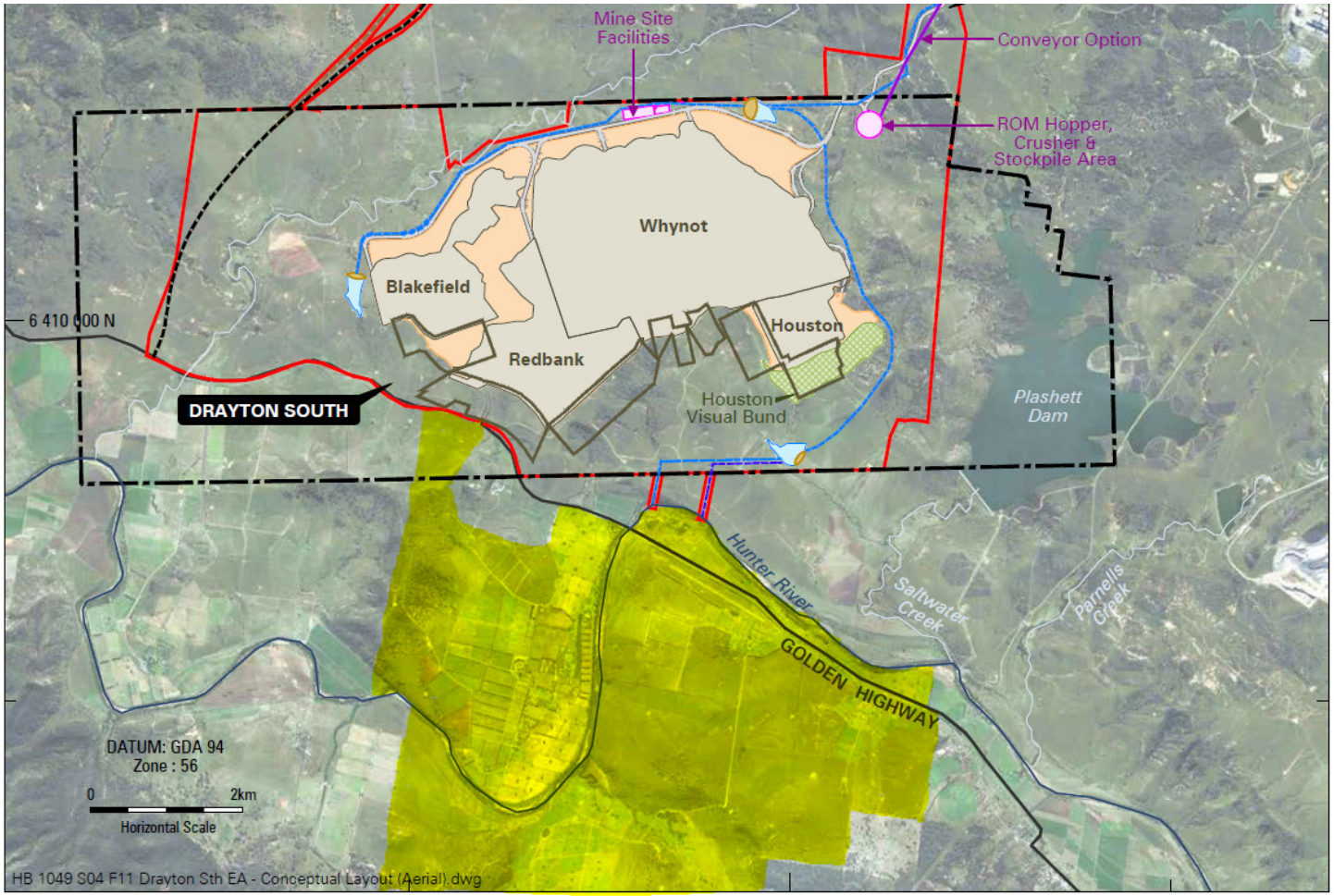
We trust the Department of Planning and Infrastructure will require the proponent to amend the project before it is assessed any further.

Please contact me if you require any further information.

Regards,

Niall Ronan
Chief Financial Officer

Annexure A – map of Coolmore land and proximity to project area



DRAYTON SOUTH COAL PROJECT

AngloAmerican | Hansen Bailey ENVIRONMENTAL CONSULTANTS |

Conceptual Project Layout

FIGURE 11

Annexure B – photos of Coolmore land and operations

COMMENTARY ON DRAYTON SOUTH COAL PROJECT VISUAL IMPACT ASSESSMENT WORKING PAPER

FINAL DRAFT

PREPARED BY

MICHAEL WRIGHT
REGISTERED LANDSCAPE ARCHITECT

FOR

COOLMORE AUSTRALIA

17.01.13

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1. INTRODUCTION

This report has been prepared by Michael Wright for Coolmore Australia in response to the proposed Drayton South Coal Project, an open cut coal mine, proposed to be located immediately north of Coolmore's property in the Hunter River Valley near Jerrys Plains in NSW, as shown in Figure 1. An Environmental Assessment Statement has been prepared for the proponent, Anglo American Metallurgical Coal by Hansen Bailey (November 2012).

This report provides a review of the *Visual Impact Assessment Working Paper* prepared for the Environmental Assessment Statement by JVP Visual Planning and Design (May 2012). This report has been prepared based on a review of the Working Paper, numerous meetings with Anglo's project team, and numerous site visits and discussions with Coolmore staff in order to gain a thorough understanding of the existing landscape character and the range of land uses which occur across and adjacent to the Coolmore property.

I have over 25 years professional experience as a landscape architect and urban designer practicing in a wide range of areas of landscape architecture including extensive experience in the assessment of visual impacts of major infrastructure projects in natural, rural and urban environments.

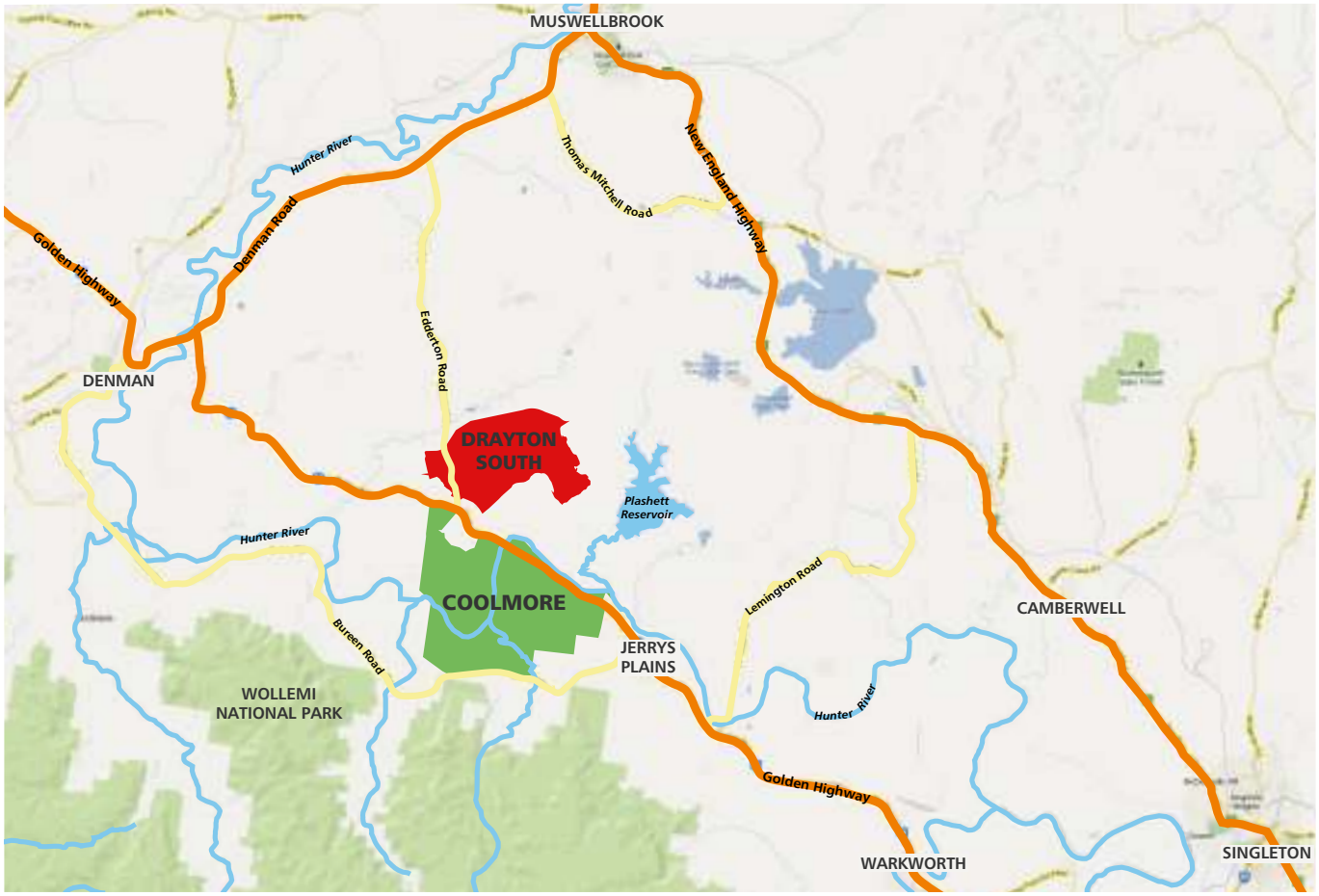


Figure 1 - Area location

2. EXISTING LANDSCAPE SETTING

When considering the visual impact of a large piece of infrastructure such as an open cut coal mine, there are a range of factors which must be considered. The visual landscape which generally is described in terms of landform, vegetation, cultural and land use features, is a key consideration in visual assessment.

The quality of the landscape, and generally the surrounding land uses, determines the level of visual sensitivity to any proposed changes to that landscape setting. For example, an open cut mine worker will potentially have less visual sensitivity to a proposed development such as an open cut mine than a local resident, tourist or visitor to the area. That visual sensitivity is often increased when the landscape setting is very scenically attractive.

The other key consideration in the assessment of visual impact relates to the scale and nature of the proposed development and how visible it would be from sensitive locations or viewpoints. A final consideration in the process is to identify if there are any appropriate and effective measures that would mitigate the identified visual impacts.

The following section briefly describes the key aspects of the visual assessment as it pertains to the Coolmore property.

HUNTER RIVER VALLEY - HIGHLY SCENIC LANDSCAPE

Whilst the land on which the mine is proposed to be located, consists primarily of moderately undulating foothills of cleared, open grazing paddocks, with limited tree cover; the adjoining land to the south is, by comparison, highly scenic; comprising the Hunter River and the adjoining irrigated floodplain meandering through undulating hills and ridges, with a forested mountain range, Wollemi National Park, to the south which creates a prominent and attractive backdrop to the area. The high quality of this scenic landscape immediately south of the proposed mine site, needs to be attributed with the highest levels of sensitivity when considering the visual impacts of the mine activities in the valley.

View of Coolmore looking south over the Hunter River floodplain towards the forested Wollemi National Park

THE GOLDEN HIGHWAY - MAIN ACCESS AND TOURIST ROAD

The Golden Highway is the main highway connecting Dubbo in the Central West of NSW to Newcastle and the Pacific and New England Highways. It is the primary route for clients, visitors and staff travelling to Coolmore. It is an important tourist route and therefore most motorists will be visually sensitive to changes in this highly scenic landscape which contrasts considerably with the less scenic landscape around Warkworth to the south, for example, where open cut mining operations are clearly visible.

The Warkworth area is characterised by undulating hills and ridges with areas of woodland interspersed with grazing land. This area has a number of existing large open cut coal mines located close to and on both sides of the Golden Highway. By contrast, the Jerrys Plains area is characterised by the scenic Hunter River valley comprising a floodplain of irrigated paddocks with undulating hills and ridges of grazing land with scattered trees on both sides of the river.

The western boundary of the Warkworth area, where the distinct change in the landscape occurs, is approximately 6 kilometres to the east of the Jerrys Plains township and a further 8 kilometres (approximately) to the Coolmore main entry. The open cut mines at Warkworth are approximately 16 kilometres east of the Coolmore main entry gate which equates to approximately 15 minutes of driving through the scenic valley landscape where open cut coal mines are not evident to the motorist.

The highly scenic nature of the valley is immediately apparent to any visitor as they drive along the Golden Highway through the Jerrys Plains area. The contrast between the Warkworth landscape and the Jerrys Plains landscape is emphasised by the lack of coal mines being apparent in the valley. Therefore any coal mine activity visible when approaching Coolmore through the valley around Jerrys Plains will be a significant impact on the property's presentation and therefore the business itself.

The Golden Highway near the eastern boundary of Coolmore looking northwest towards the proposed site of the Houston Pit.

Coolmore presents a highly cultivated and well maintained appearance across the whole property

View across the Coolmore landscape looking north towards the site of the proposed mine with Mt. Arthur in the background

COOLMORE - HIGHLY DEVELOPED CULTURAL LANDSCAPE

The visual quality of the landscape both in and around thoroughbred breeding studs is of paramount importance to the business model of this industry. Not only is the presence of highly productive land with good soils and ample water of fundamental importance to these studs, but the physical appearance of the property and the surrounding landscape is also a critical issue in the siting and ongoing operation of these businesses.

Thoroughbred breeding studs must demonstrate to, and convince each client of the first class operation that they run, which enables them to offer an ideal environment for the safe, secure and reliable management of their valuable bloodstock. Clients' judgment of the stud's quality is based substantially on the property's physical appearance. For this reason, the studs must not only provide the most up to date and well managed facilities, but also present them in the most attractive setting to reinforce the message that they (the client) are guaranteed every chance of achieving the most successful outcome for their brood mare, foal and/or yearling. This preoccupation with presentation is clearly evident in all of the major studs around the world, whether in Ireland, USA or Australia. Presentation is a central element of each stud's marketing strategy.

The presentation of the Coolmore stud is commensurate with its standing as one of the premier thoroughbred breeders in the world. The selection of the site on the Hunter River is the result of careful research to identify a location with all of the attributes necessary to ensure the establishment of a successful and enduring thoroughbred breeding business. The presence of alluvial soils, ample water, clean unpolluted air and an undulating topography combines with a highly scenic setting of the river valley with a magnificent backdrop of the forested ranges of the Wollemi National Park, the largest wilderness area in NSW which forms part of the Greater Blue Mountains World Heritage Area.

The original Arrowfield homestead constructed in 1832 with the stallion barns in the background.

Yearlings in one of the well grassed paddocks on Coolmore.

High quality infrastructure is a hallmark of the visual presentation of Coolmore

The Coolmore property presents a highly developed landscape with manicured grounds, even rows of planted trees, well designed building complexes and irrigated paddocks surrounded by consistent and well maintained timber fences. A network of sealed and gravel internal access roads provides access to all areas of the property. The combination of these landscape features set against the forested mountain range to the south creates a highly scenic and visually pleasing setting. Figure 2 depicts the key facilities and their arrangement across the property.

The presence of other compatible industries surrounding the stud, such as well managed rural properties that maintain this pastoral landscape, are also important to the scenic values. This visual landscape is central to the presentation and operation of the Coolmore business. Coolmore is therefore a highly sensitive visual environment, particularly in the context of an open cut mine. Coolmore's clients wish to see a property which has "nothing out of place". However, an open cut coal mine anywhere within the property's viewshed, will most certainly be considered "out of place".

A network of well maintained sealed and gravel roads provide access to all the areas of the farm for Coolmore clients and staff.

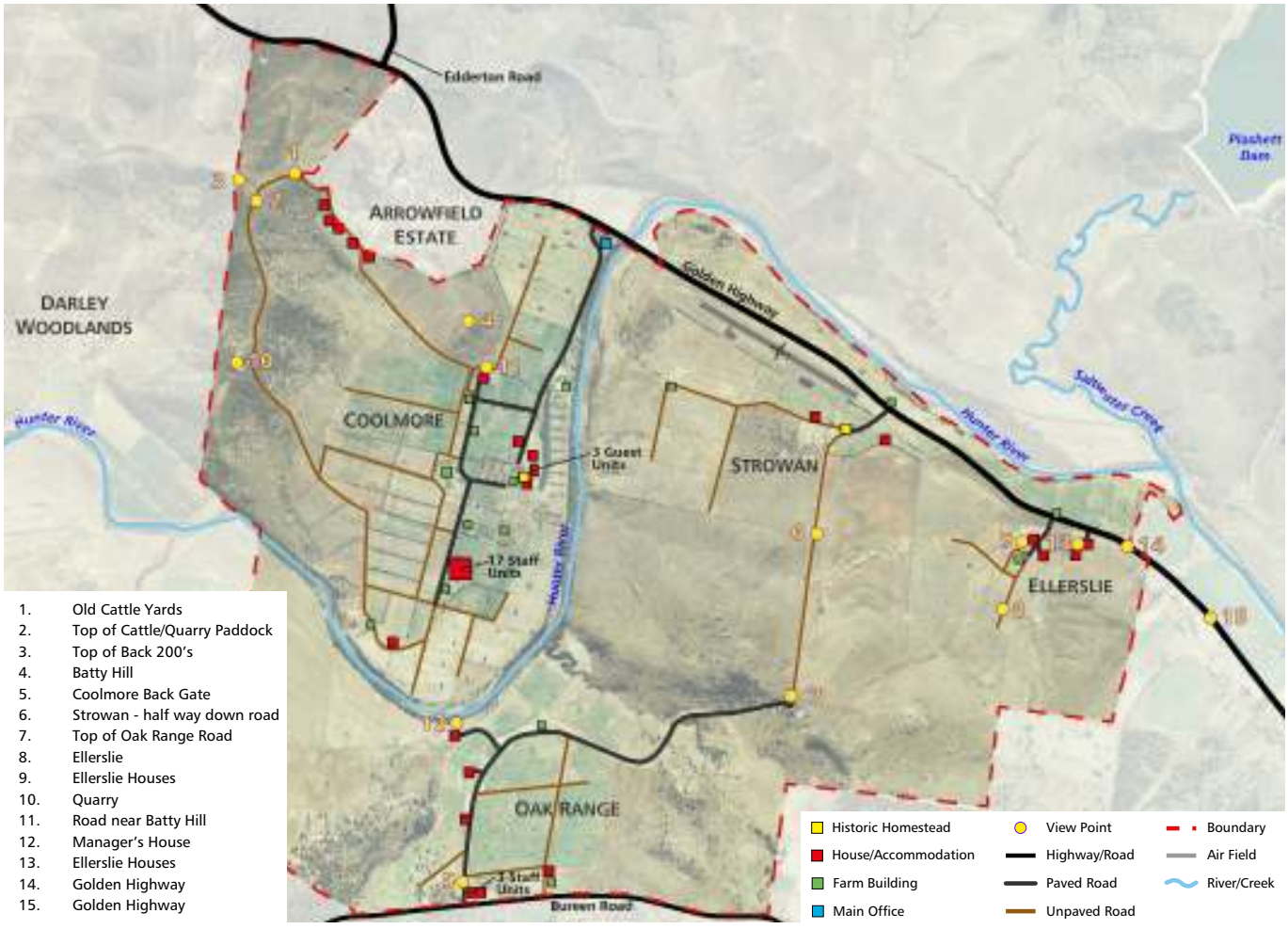


Figure 2 - A plan of the Coolmore property depicting its boundaries and some of the main facilities including the road network and residential buildings.

COOLMORE CLIENTS AND VISITORS - SENSITIVE TO THE VISUAL ENVIRONMENT

Clients and visitors to Coolmore are considered to be highly sensitive to the visual character and quality of the landscape setting in this area. They perceive the quality of the setting to be a key indicator to the overall quality of the Coolmore establishment and its ability to breed quality bloodstock in a safe and stable environment. A comparison of the presentation of the Coolmore property with other comparable thoroughbred studs both in Australia and overseas reveals the fundamental importance of the presentation of the property to attract clients to the business.

Coolmore hosts clients and visitors all year round. They arrive in small groups in private vehicles, in large coaches and even light aircraft. Clients will be taken on inspection tours to a wide range of areas on the property. Not only do they travel on the Highway and the extensive internal road network but they also may be taken into paddocks to inspect their mares, yearlings or foals. The most popular time to visit the stud is during the Stallion Parade when clients and visitors travel around the Hunter Valley to inspect all of the major studs. Coolmore is considered one of the major events to attend at this time, hosting up to 1400 people.

Coolmore clients and visitors usually travel by road but they also use light aircraft to fly directly to the property landing on Coolmore's airstrip located on the property and adjacent to the Golden Highway. Observing open cut mining activities on even one occasion in relatively close proximity to the property could represent a serious impact on a client's decision to do business with Coolmore. Therefore the visual impact of the mining activities, visible from any part of Coolmore, the Golden Highway and from aircraft, will have a significant impact on these highly sensitive viewers.

Coolmore attracts up to 1400 clients and visitors to their annual Stallion Parade.

The paramount importance of the presentation of the facilities is clearly evident during this event.

Coolmore clients are often taken into the paddocks throughout the farm to inspect their horses.

3. PROPOSED DEVELOPMENT

The following section outlines the visual form and scale of the proposed open cut mine in the Hunter River Valley landscape adjacent to the Coolmore property and the way in which it is likely to have a visual impact on the property and its operation.

MINE OPERATION - HIGH LEVEL OF EXPOSURE IN THE VALLEY

The main exposure of mine activities within the Coolmore visual catchment will be of the Houston Pit which is the one area of the proposed open cut mine which breaks through the ridge on the northern side of the valley. A large earth bund, 77 metres high and 1.75 kilometres long, is proposed to screen the open cut mine workings in the Houston Pit.

The bund location is sited at the lower end of a long narrow valley which opens into the wider Hunter River valley. The valley forms part of the Saltwater Creek system which flows south into the Hunter River. The proposed bund at the end of this valley will be clearly visible from many parts of the Hunter River valley including areas around Jerrys Plains through to elevated areas west of the Coolmore homestead.

In particular it will be most visible from areas within the eastern half of the property including the two residential building clusters at Ellerslie and Strowan, the internal roads in this area, the adjoining paddocks and the Golden Highway. In addition the proposed bund would also be clearly visible from the Coolmore lookout known as Batty Hill where clients are regularly taken to overview the whole property. The bund will also be visible from other parts of the property including Oak Range at the southern entry to Coolmore.

The bund will substantially exceed the size of the nearby wall of Plashett Dam which is approximately half as long and half as high. During its construction and prior to the establishment of the vegetation, the bund will be continuously visible to a wide visual catchment in the valley over at least a 16 month period.

This photo of a mine operation near Muswellbrook illustrates the degree of visual contrast that an overburden dump can have in a rural landscape setting.

Typical mining equipment used in open cut mining including a dragline, two haulpaks and a water truck. Note the size of the road registered vehicles parked just to the left of the dragline.

The scale of the disturbance caused by an open cut coal mine is evident in this photograph taken of the Drayton Coal Mine just north of the proposed Drayton South open cut coal mine site.

Depending on the success of the revegetation process, it might still take a number of years growth before the vegetation on the bund enables it to begin to recede into the surrounding landscape.

An alternative location and design of the bund, Option 4, has been proposed by Coolmore in a narrower section of the gully where a smaller bund could be constructed, as illustrated in Figure 3. This bund is designed to benefit from the natural screening effects of the two spurs which run down either side of the gully and would therefore limit the areas from which it would be visible. Being of a smaller size, it would also be faster to construct which would reduce the period of time during which Coolmore would be visually exposed to this construction activity.

While Coolmore would still be visually impacted by this alternative bund, Option 4, it would be approximately half the length and covering approximately half the area of Option 3. Coolmore would clearly prefer there to be no mining over the ridgeline into the Houston Pit however the smaller bund presented in option 4 is preferred to Anglo's Option 3.

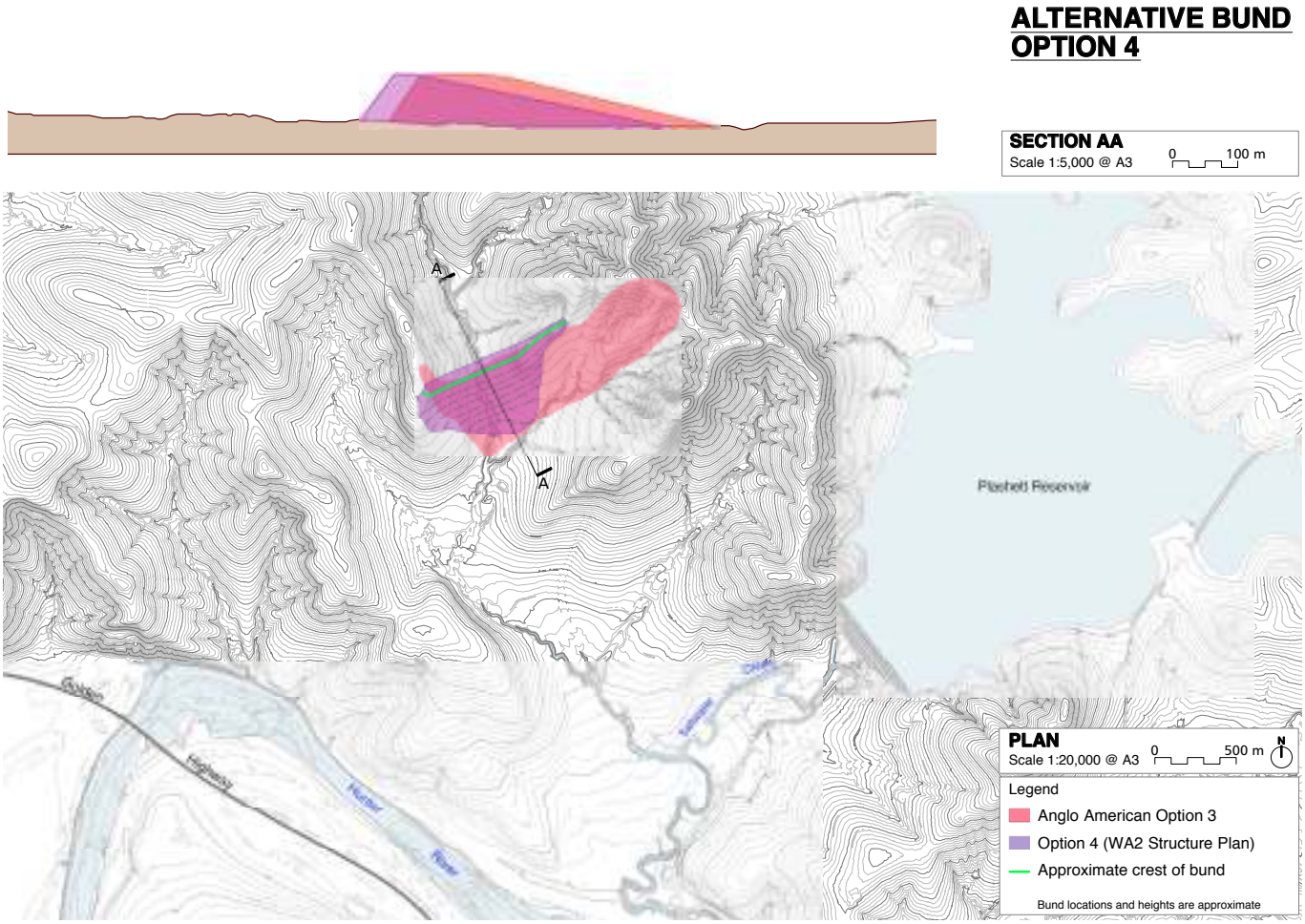


Figure 3 - This plan depicting Anglo's preferred bund location and shape (Option 3) and Coolmore's preferred bund location and shape (Option 4).

Both bunds need to be of a similar height in order to effectively screen the open cut mine workings behind. Therefore both bunds will be exposed above the skyline from many viewpoints including the Strowan and Ellerslie residential building clusters, the internal roads and the Golden Highway.

The scale of Anglo's proposed bund is difficult to comprehend the visual terms, consequently a comparative long section, illustrated in Figure 4, has been produced overlaying it with the Sydney Harbour Bridge, a landmark well known to most people to provide a sense of scale. The comparative long section clearly demonstrates that Anglo's preferred bund will be a massive piece of construction that will be difficult to blend into the existing landscape setting without creating high visual impact.

Other areas of the mine's activities which are predicted to be visible, such as the areas of open cut located high on the eastern ridge near Plashett Knob, in the Whynot Pit, need to be more closely analysed in order to reduce their visibility from elevated viewpoints such as Batty Hill, on Coolmore, to further reduce the overall visual impact of the mine activities.

A key issue for Coolmore is that not only will the mining activities be visible from many locations around the property, many of these activities will break the skyline and will therefore be more obvious silhouetted against the sky. Not only will the earthworks be visible above the existing skyline, so will the heavy earth moving equipment which will be silhouetted as they move around on top of the earthworks. This will result in viewpoints on the valley floor such as the Golden Highway being subjected to higher levels of impact.

Open cut coal mines are the largest and most obtrusive man made elements in the Hunter River valley landscape and as such, they have a very high visual effect on the visual environment. The international thoroughbred horse breeding studs are some of the most visually sensitive activities in the Hunter River valley as demonstrated by their very high standard of building and landscape presentation. The combination of the very high visual effect of coal mines and the very high visual sensitivity of the thoroughbred studs such as Coolmore, will inevitably result in a very high visual impact when ever the mining activities are visible.

The scale of open cut mining equipment is represented with this image of a haulpak.

Coolmore clients, visitors and staff, in addition to tourists and other travellers on the Golden Highway, will be exposed to the visual impact of increased numbers of large trucks carrying mining machinery, travelling and temporarily obstructing the highway, which will reinforce the presence of mining occurring in the immediate area of the property.

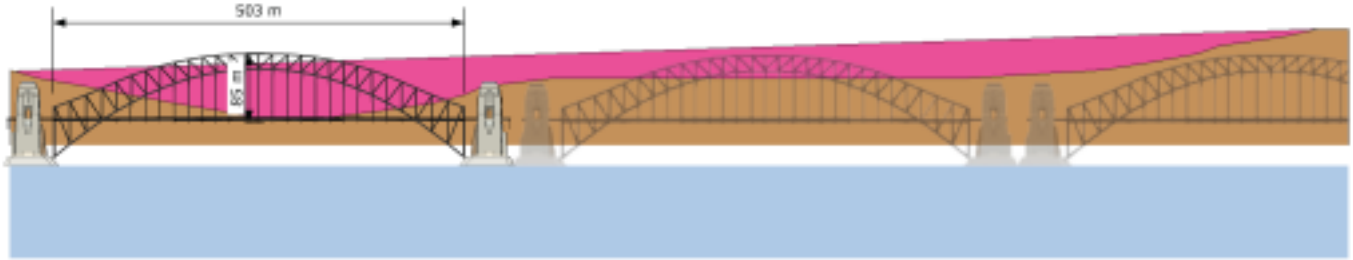


Figure 4 - Long section of the proposed Houston Pit Bund (in pink) with a scaled overlay of the Sydney Harbour Bridge to illustrate the comparative length and height of the bund.

4. A RESPONSE TO THE VISUAL IMPACT ASSESSMENT

The following section outlines a review of the Visual Impact Assessment in terms of its response to the Director General's Requirements, its adequacy to reflect the levels of sensitivity inherent in the Coolmore property and the business model itself, and ultimately the impact of visual exposure to mine activities on Coolmore.

DIRECTOR GENERAL'S REQUIREMENTS

The Director General's Requirements for the Visual Impact Assessment of Anglo's proposed Drayton South Coal Project mandate an "Analysis of costs and benefits of potential alternative locations for the proposed Houston Pit Visual Bund, and detailed specifications and timeframes for the preferred alternative, and assessment of visual impacts on the thoroughbred breeding industry, residents, tourists, and other road users."

For the purposes of this review of the *Visual Impact Assessment Working Paper* this review has responded to each of the individual elements of the visual impact Director General's Requirements as follows:

1. Analysis of costs and benefits of potential alternative locations for the proposed Houston Pit Visual Bund, and
2. Detailed specifications and timeframes for the preferred alternative, and
3. Assessment of visual impacts on the thoroughbred breeding industry,
4. Residents,
5. Tourists, and other road users;

RESPONSE TO DIRECTOR GENERAL'S REQUIREMENTS

It should be clearly noted that ***no reference*** was made to the Director General's Requirements in the Visual Impact Assessment report.

1. Analysis of costs and benefits of potential alternative locations for the proposed Houston Pit Visual Bund, and
   - No analysis is presented in the Visual Impact Assessment report of the costs and benefits of potential alternative locations for the proposed Houston Pit Visual Bund, nor is there a reference to it in a section of the Environmental Assessment Statement.
2. Detailed specifications and timeframes for the preferred alternative, and
   - A description of the specifications and timeframes for the preferred alternative is presented on pages 35 and 36 of the report. Additionally, these timeframes are acknowledged as being subject to potential delays including wet weather and production delays. Therefore a more conservative estimate of the timeframe should be presented to reflect these possible events in the form of a range, not a precise number. This should

include in comparison between proposed and actual timeframes that have occurred at other mines in the area as well as an approximate start time so that seasonal and holiday constraints can be factored into the overall timeframe as well.

- The report notes on page 36 that tree screens have been established on the Golden Highway, Edderton Road and the main ridgeline however none of these will screen the Houston Pit.
- On page 19, the report acknowledges that the proposed bund will have a high visual effect in areas of high visual sensitivity which results in a high visual impact, including viewpoints on Coolmore. It describes the period of high visual impact as "short" without acknowledging that a minimum of 12 months of exposure to construction work could substantially affect the presentation of the Coolmore environment and therefore it's business.
- On page 36, the report also states "these effects [visual] will be minimised by optimising rehabilitation timetables." However, the report fails to explaining how the optimising of rehabilitation timetables will be achieved or what the benefits would result, or how many additional years it will take for the rehabilitation to effectively cover and blend into the existing landscape of the area.

3. Assessment of visual impacts on the thoroughbred breeding industry,
   - Throughout the report there is no recognition of the critical importance of the scenic quality of the whole landscape setting to the thoroughbred breeding industry. It is described in a compartmentalised way in separate Visual Character Units but does not acknowledge nor assess the cumulative importance of the wider landscape including the central importance of the Hunter River in the visual setting or the Wollemi National Park backdrop, to the selection of this location to establish this international breeding operation.
   - The Golden Highway is the main access route to Coolmore for clients, visitors and workers. The visual experience of these people as they approach and drive into Coolmore is critical to the success of the Coolmore business and therefore the level of importance of the visual impact of the mine cannot be understated. The report makes no mention of Coolmore clients and visitors nor their visual sensitivity.
   - No mention is made of the use of aircraft to access the property by clients and visitors, all of whom are likely to be very sensitive to the visual impacts of an open cut mine that is within 2km of Coolmore.
   - Edderton Road is also a key access road for clients, workers and visitors to Coolmore connecting to the towns, breeding operations and other facilities e.g. Veterinary Hospital, to the north. This is not acknowledged nor included in the assessment on page 106. Although tree screening is proposed along the road boundary the successful effect of these trees as a screen can not be assured.

- The photomontages, specifically the series on page 102, are not a true representation of the conditions that usually prevail with boundary screen planting. Past experience demonstrates that boundary tree planting once established can screen mining activities for a few years, if it is well maintained e.g. watering and replacement of failed specimens, however as the trees grow their crowns lift exposing the trunks and therefore allow views through to the mine operations behind. This situation already exists on the Golden Highway near the Edderton Road intersection.
- The proposed screen planting along the mining area boundaries is only effective if a mix of trees and shrubs of a range of sizes are used. As shrubs a relatively short-lived, replanting would be necessary over the 27 year life of the mine to maintain an effective screen. This is neither acknowledged or addressed in the assessment or mitigation measures in the report.

4. Residents,
   - There are 34 freestanding residential houses and 17 residential units for staff and guest accommodation in 2 freestanding residential houses on Coolmore, which employ up to 150 staff. This is a significant issue as this represents the equivalent population of a small village like Jerrys Plains. This is not acknowledged or addressed in this report.
   - At least 4 of the Coolmore residences at Ellerslie and Strowan are directly impacted by the Houston Pit mine workings and each of these houses are located on an elevated slope with a northerly orientation which is also towards the Houston Pit. Screening the mine by planting tree screening in front of the houses, as proposed on page 109, would obstruct their current and attractive views over the river to the northern hillsides and Mt Arthur which is also the primary aspect for Winter sun.

5. Tourists, and other road users;
   - No mention is made of the Golden Highway being used by tourists from Newcastle and the Hunter travelling to Mudgee, Dubbo and the central west of NSW nor the numbers of vehicles using the road per day. This is not acknowledged or addressed in this report.
   - Coolmore's hosts clients and visitors all year round with the annual Stallion Parade attracting up to 1,400 people who all travel on the Golden Highway to access the property unless they fly into Coolmore by light aircraft. This is not acknowledged or addressed in this report.
   - The mine operation may still be visible from the realigned Edderton Road with some sections of the road within the EL boundary being located as close as 2km to the edge of the Blakefield Pit. This is not adequately acknowledged or addressed in this report.

ADDITIONAL COMMENTS

The following sections outlines the range of issues that need to be addressed in the Visual Impact Assessment for this project.

1. Visual impact is not ultimately determined by single location viewpoints but a cumulative experience as the viewer travels through the landscape. Single viewpoints are representative but not reflective of the cumulative affect on people in the landscape. No mention is made of this in the report.
2. The report needs to present a Seen Area Analysis of the whole property in order to demonstrate the extent of the property from which mine activities will be visible. This is important because clients and staff travel over most of the property to inspect bloodstock in the paddocks, not just on the roads or at the stabling facilities.
3. The photomontages in the report are presented in a format which is too small to discern the extent of the visual impact. These are critical tools to test the judgments made in the report. The small frame size is not representative of the scale of the views when viewed on site. A3 size is a common presentation format for each individual photomontage and this size would seem to be appropriate given the magnitude of this project.
4. The photomontage location plan is too small to clearly identify where the actual photo locations are sited. This is important information and should be easier to read. An A3 format would be more appropriate and also zoomed in to a larger scale.
5. The rendering of the rehabilitation is also misleading because the colouring makes it too hard to identify where the mine activities start and where the existing landform finishes. Bright colours and larger images should be used to more easily define the extent of the proposed works.
6. Detailed planting plans should be prepared in high impact areas such as the Golden Highway and the Coolmore viewpoints, in order to demonstrate the effectiveness of proposed tree screening in order that the predicted benefits be considered as a part of the Environmental Assessment Statement assessment and prior to a decision on the project.
7. The proposed tree screening on the boundaries is likely to create an artificial wall-like barrier which ends up looking very out of character with the landscape patterns of the area and that they should not be exact, neat and straight rows of trees but more variable in their form, responding to the landscape topography and land use patterns of the area.
8. The statement “The visual impact on Coolmore Stud is limited” is a sweeping generalisation and suggests that visual impacts will be experienced at relatively few locations on Coolmore whereas the high visual impacts will be experienced from a large number of locations on Coolmore. There is no recognition that Coolmore’s clients visit many areas on the property including paddocks.

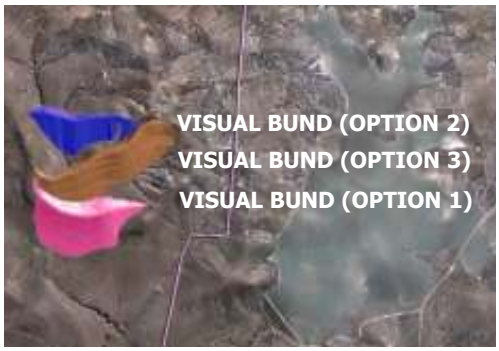
9. The Visual Impact Assessment report acknowledges that scenic amenity values are an important part of the business image so why does the assessment have very low impact rating but not a very high impacts from some viewpoints that have very high sensitivity e.g. Batty Hill. Coolmore has VERY high visual sensitivity and a category should have been provided to reflect this, as Coolmore has invested heavily in the presentation of the property and this forms an essential element in its business model. Any coal mining activities within the view catchment of the property will have a very high impact on the operation and indeed the viability of the whole property.

10. On page 104 of the Visual Impact Assessment report it notes that Coolmore currently has views of existing mining operations such as Mt Arthur, Hunter Valley Operations Mine and the Bayswater Power Station, however it fails to mention that these operations are between at least 5 to 10 kilometres away whereas the Drayton South mine will be as little as 1.5 kilometres from the front entrance gate to the property. This relative distances to surrounding mines and power stations from the main entry points on Coolmore are illustrated in Figure 5.

11. The potential visual impact of dust is not assessed in the visual impact assessment report and yet there is a high probability that plumes of dust from the exposed earth in the open cut will be potentially clearly visible on windy days.

Figure 5 - Plan illustrating the range of distances between existing mining operations and infrastructure and two entry points to Coolmore, as well as the distances to the proposed Drayton South Coal Mine from these two entry points.

12. The Houston Visual Bund is intended as a screening device for viewing areas south of the Houston Pit including Coolmore and yet it seems to be unnecessarily large to affect the necessary screening. If the Houston Pit visual bund options 1 and 2 were designed to effectively screen mining operations from southern viewpoints, why does Option 3 need to extend so much further east? It would appear to be performing another function beyond providing a visual screen which may be related more to efficient overburden emplacement. A smaller alternative bund would effectively screen the pit and thus reduce the volume of material to be placed in front of the pit and this would reduce the construction period as well as the scale of the bund thus reducing the visual impact on the viewpoints south of the pit.
13. High impacts are predicted over a 12 to 18 month period and yet these are not considered to be significant on the equine critical industry cluster which indicates that the Visual Impact Assessment report consultant does not appear to appreciate the importance of the visual environment to this industry and the impact it could have well beyond the 16 month predicted construction period.
14. On page 56 of the report, the visual bund comparison photomontages are unclear and too difficult to interpret accurately the difference between each of the bund options.
15. The 16 month construction period could be an optimistic estimate and perhaps they should use a range not a definitive number. Weather conditions, global markets, latent conditions in the geology, equipment failure or changes to mine production programming, are just some of the factors that could change this overly optimistic timeframe.
16. The proposed tree screening on the boundaries should be used as forest and woodland restoration areas with higher biodiversity values than a simple windrow of trees. These restored forest and woodland areas could also provide wildlife corridors which might connect to other areas with habitat values. Wildlife corridors are vital for fauna movement between habitat areas in order to maintain species diversity and survival of both fauna and flora, thus making the revegetated areas more sustainable in the longer term and likely to provide better screening of the mine workings.
17. Anglo American should be restoring the forest and woodlands around the margins of the property prior to work commencing in order to ensure that this restoration work is actually undertaken and provides improved benefit to the visual landscape well before the 27 year mine life ends.
18. The thoroughbred breeding industry and the open cut coal mining industry are potentially one of the most incompatible combinations of land uses to share a common landscape. The critical importance of the visual landscape to a thoroughbred breeding operation indicates that every possible measure to avoid the visual impacts of open cut mining needs to be implemented in order to ensure the ongoing viability of the property and its business.



Plan view of the three bund options prepared by Anglo.

5. CONCLUSION

The landscape to the west of Jerrys Plains village is currently unaffected by the visual impacts of mining. Rather, it is a highly scenic gateway to the Upper Hunter Valley comprising the immaculately maintained property of Coolmore, the Hunter River and its irrigated floodplains and undulating hills and ridges which are framed by the forested ranges of the Wollemi National Park. The Golden Highway, the main east/west road connecting Dubbo to Newcastle, runs through this impressive landscape.

Thoroughbred horse breeding is an industry premised on conducting its operations in areas with flat and undulating land on good soils, abundant clean water and pristine scenic surrounding landscapes. Coolmore is one of the most successful thoroughbred breeding operations in the world. It's Jerrys Plains property is widely regarded as one of the most impressive thoroughbred studs in the Southern Hemisphere.

The development of the proposed Drayton South coal mine, in particular, the Houston Pit and its associated bund will transform a section of this scenically beautiful valley into an industrial landscape with adverse visual impacts on Coolmore, its clients, tourists travelling on the Golden Highway, not to mention the residents of Jerrys Plains and the 100 permanent residents that live on the Coolmore property.

The Visual Impact Assessment prepared for the Drayton South open cut coal mine project fails to adequately assess the importance of the visual impacts of the proposed coal mine on the Coolmore property, its sensitive business operations and its resident staff. Coolmore represents five-star accommodation for horses; and just as a five star hotel or resort would not be a viable operation if located in close proximity to an open cut coal mine, this premier horse breeding stud's viability is directly threatened by the proposed Drayton South coal mine.

The landscape of an open cut coal mine is the antithesis of the landscape of a thoroughbred breeding stud. As a result, an open cut coal mine should be excluded from the visual catchment of thoroughbred breeding studs such as Coolmore.

Coolmore Australia
Anglo American Metallurgical Coal
EA Submission January 2013

ALTERNATIVE VISUAL BUND OPTION FOR DRAYTON SOUTH PROJECT

by John Dwyer
16 January 2013

1. Experience

- I have been employed in the mineral and coal industry for over 40 years. My employment has primarily been in management positions involved with mines. Over 30 years of this has been in the NSW Hunter Valley open cut coalfields. Responsibilities have included exploration, mine design, external stakeholder and mining company approvals, construction, operations, as well as mine rehabilitation and mine closure. My CV is attached at Annexure A.
- I have been engaged to provide independent expert advice to Coolmore Australia (**Coolmore**) in relation to the mine and pit design and bunds for the Drayton South Project.
- I have been in discussions with AAMC between September 2010 and November 2012 in relation to pit design and bund location. I have carefully examined the Drayton South EA Report.

2. Background

I refer to the Environmental Assessment that has been prepared by Anglo American Metallurgical Coal (**AAMC**) for the Drayton South Project (**EA**).

- The EA states that operations will be concealed behind topography "*with the exception of the views that will be available to the Houston visual bund while it is being constructed*" (Executive Summary p xii)
- The Houston pit contains coal reserves of approximately 12Mt out of a total of 119Mt for the Project (section 4.2.1).
- Coolmore has advised me that the location and nature of both of the Houston pit visual bund options proposed by AAMC (ie options 1 and 3) have extremely unacceptable visual impacts because the construction activities will generate excessive visual intrusions from numerous vantage points on the eastern end of its property. These vantage points are where Coolmore takes its customers to show the majestic vistas of its stud and the accompanying, rich, alluvial flats of the Hunter river in order to sell its farm as a top class thoroughbred stud. I have relied on the expert advice of Michael Wright in relation to visual impacts of the bund options.
- AAMC present option 3 as their selected option in their EA despite continued objection by Coolmore.
- Note: Option 2 presented by Coolmore was unacceptable to AAMC because (in their view) that option sterilised too much coal in the Houston pit. Also, according to AAMC, it did not provide the operational strike length that was needed to allow their dragline to work effectively and consequently the basal coal seams were not economic to extract adding to the coal that was sterilised.

3. History of discussions between AAMC and Coolmore

- Between September 2010 and November 2012 there have been discussions between the parties in relation to the location, size and orientation of the Houston visual bund. These discussions span the time period before and after AAMC had selected their Option 3 for the Preliminary Environmental Assessment (**PEA**) and draft EA. We note that AAMC did not change the

option for the bund between the PEA and the EA. These discussions progressed as follows:

- Houston pit bund meetings commenced substantially in September 2010 when Option 1 was selected by AAMC as their preferred development path. At this time Coolmore stated that they did not want to see the mine at all and all parties agreed to focus on the Houston pit bund to solve the remaining visual issues surrounding development of the Project.
- In November 2010, tours of nearby mines and visible mining areas in the district were arranged, to allow Coolmore to see the actual size and nature of what was being proposed (Option 1). Coolmore expressed their concern about the physical size of the proposed bund. Coolmore was also concerned about the short time frame to evaluate bund options prior to the Preliminary Environmental Assessment (PE planned for March 2011.
- The draft PEA was received by Coolmore in Feb 2011.
- In April 2011 Coolmore advised AAMC that they were not happy with the situation, especially since AAMC staff would be relocating to Brisbane and there was no advance in bund design to improve Coolmore's position.
- On 19/4/11 AAMC advised Coolmore it was going public with the project and planned to have the EA available in November 2011.
- In May 2011 AAMC advised Coolmore that the mine plan was not yet finalised and the EA was planned for January 2012.
- In June 2011 AAMC advised Coolmore that there was no data available yet for bund discussions and that the Option 1 was essentially an out of pit emplacement area. Coolmore requested to examine the data. Coolmore was advised that Planning Focus was held the previous week with Government departments. Meetings with Coolmore were planned.
- In July 2011 AAMC advised that the Coolmore proposed alternate bund (Option 2) was not acceptable to AAMC because it sterilised too much coal (as noted below). This was because Option 2 was a much smaller mine area and did not allow their dragline to operate efficiently compared with Option 1.
- In September 2011, further discussions were held on possible alternative bund options between Coolmore and AAMC.
- In late November the three options (Options 1, 2 and 3) for bunds were discussed in detail and AAMC indicated it had chosen Option 3 for assessment in the EA.
- In Feb 2012 AAMC confirmed that Option 3 was the bund they were proceeding with, but Rick Fairhurst (the project manager) advised "*if a good idea comes up then we can look at it*". Coolmore advised they could not support AAMC on the Option 3 bund.
- In March 2012 Coolmore requested and AAMC provided detailed, large scale structural plans of the Houston pit, to allow Coolmore to examine what might be possible in further, alternative bund designs. These structural plans included topography, seam thickness, overburden and interburden thickness, etc from which mine plans could be developed and volumes calculated.

- In April 2012 Coolmore commenced further evaluation by John Dwyer and Keith Smith who was a Hunter Valley dragline operation manager, and who is very experienced in operations with short strike lengths and confined conditions for draglines. Keith Smith is very experienced with the Drayton dragline having planned the Drayton mining operation earlier in his career. The results of this investigation are provided below at part 4.
- In August 2012 the Draft EA was provided and Coolmore again asked if the Option 3 bund was final. AAMC said it was, to ensure the dragline had sufficient strike length but if any changes were to be suggested then they should be proposed sooner rather than later or at the public exhibition stage.
- In early November the EA was placed on public exhibition.

The end result of all these meetings was that the Houston pit bund issue was left unresolved. Coolmore still had serious visual impact issues which revolved mainly around the bund size, location and build time.

4. Alternative for Houston Visual Bund: Option 4

- From a detailed examination of the intended Houston pit mining area and its alternative, potential bund locations, I have developed a further option, (option 4).
- A plan of Option 4 is attached (Annexure B). The Option 4 footprint (smaller) is shown on the attached plan (based on the WA2 structure plan) overlying the AAMC Option 3 footprint (larger)
- The development of Option 4 was achieved by targeting the following criteria
    - Reduced size of the external footprint of the bund;
    - Reduced volume of material placed in front of Coolmore;
    - Reduced time it would take to build the bund;
    - Reduced other environmental issues (dust , noise, etc);
    - Increased distance from Coolmore if possible;
    - Allowed the dragline to work efficiently with strike lengths of about 800m (which is AAMC's mine planning guideline); and
    - Maximised the coal recovery for AAMC whilst achieving benefits for Coolmore.
- Option 4 offers a much better solution to Coolmore's visual impacts issue. It is my view after discussing the issue in detail with Michael Wright (consultant visual expert) that the Option 4 greatly reduces the visual intrusiveness of the Houston Visual Bund. This is in terms of bulk, scale, location of bund, skyline, and visibility of the bund visible from fewer locations etc. Compared with Options 1 and 3, Option 4 has substantially reduced impacts for Coolmore and also does not detract seriously from AAMC's Houston pit mining plan (unlike option 2 which was rejected by AAMC because of sterilisation of substantial coal reserves).
- For Coolmore, Option 4 has the following attributes;
    - It has a similar height to Option 3 which could if needed, be easily added to (72m versus 77m) to ensure the entire visual line of sight from Coolmore to the mining operations is blocked;

- a substantially smaller footprint (approx. half the size- 34 ha versus 68ha for Option 3) and smaller crest length (1.1km crest versus 1.75km crest) and accordingly, it has reduced visibility
- a substantially smaller volume (approx.7 Million loose cubic meters versus 16.6 Mlcm)
- It therefore has a much shorter timeframe during which critical visual impacts during the construction phase are evident (probably just over half the time although it is not possible to estimate this as accurately. Purely on a volumetric basis, the time would be 7 months and not 16 months, but this correlation is not a direct relationship). AAMC states on p221 that "*the Houston visual bund has been designed to….be constructed as quickly as possible*." Option 4 achieves this ahead of Option 3 because of the substantial decrease in the volume of material needed for visual protection.

- For AAMC, Option 4 has the following attributes
  - Unlike option 2, it does not sterilise large amounts of coal. The dragline strike length for Option 4 remains nearly the same as Option 3, except for an estimated loss of about 100m from the 860m strike length and this is only in the south west corner of the Houston pit. For Option 2, the mining area was reduced substantially and the maximum achievable dragline strike length was reduced to 400m. According to AAMC engineer's calculations, under Option 2 coal reserves were cut by 7Mt because of the reduced mining area and the fact that lower seams could not be accessed by the dragline.
  - Under Option 4, coal reserves available for mining are similar to AAMC's option 3. Open cut reserves are reduced only slightly in a small area in the extreme south end of the Houston pit. Coal reserve loss is estimated at substantially less than 1Mt out of a total of about 12Mt in the Houston pit and 119Mt for the Project. Also, Option 4 will not stop coal being recovered by high wall mining techniques as planned by AAMC. There is minimal reduction of strike length available for high wall mining. Overall it is estimated that there is a reduction of much less than 10% in the Houston pit coal reserves and therefore less than 1% overall for the project as a whole.
  - Option 4 allows for the efficient and economical operation of the dragline in the Houston pit, similar to AAMC's option 3. Dragline operation in the Houston pit is a critical aspect of the AAMC Project mine plan.
  - The result is a smaller external mine footprint and consequently smaller environmental impacts (visual, dust, noise etc) for external stakeholders.

- For AAMC there are some potential, marginal impacts on the mine plan.
  - Impacts arise mainly because of the timing of removal of the overburden that would have been placed by AAMC outside the Houston mining area and in front of Coolmore under Option 3. Under Option 4, this additional mine overburden will need to be placed in alternate areas within the mine footprint. This overburden difference between 16.6 Mlcm (Option 3) and approx. 7 Mlcm (Option 4) could be placed either in the Houston pit areas that will not be mined until

much later in the mine's life or alternatively carried further away into the main overburden placement areas. The cost of emplacement in either area would be very marginal compared to the total cost of the operation.
    - For the placement of overburden within the actual overburden emplacement areas within the mine, the difference in cost is only that associated with the extra distance that the truck has to travel to place its load. In other words the costs associated with tree and soil removal, drilling and blasting, loading and hauling to one, intended location, plus the costs of placing, shaping and rehabilitation are all common to both circumstances.
    - Alternatively, for placement within the Houston pit, the material would need to be re-loaded and hauled to its final location in perhaps 12 to 17 years (from Yr 3 to Yr 15 or Yr 20). Perhaps the lesser cost would be to place the material within the Houston pit and relocate it later in the Houston pit life.
    - Depending on where and when the overburden is placed, some marginal cost increases could be incurred (because of the marginal, extra distance travelled by some of the trucks). However, it should be noted that to expose coal for mining the same volumes of overburden will be removed in both cases (Options 3 and 4). It is some of that overburden that is placed outside the mine area preferentially on the Option 3 bund, which causes the visual impact problem for Coolmore. The operational issues associated with this have not been discussed with AAMC, because AAMC decided on Option 3 and have not been prepared to negotiate any further thus far.
- In my view the impact of changes due to the adoption of Option 4, on the net present value (NPV) of the Drayton south proposed development, would be relatively insignificant.
- Certainly any marginal change in costs (as described above) would not be considered significant in the light of a vastly improved circumstance for Coolmore, by the substantial reduction in environmental impacts which would contribute to reducing land use conflict. This is especially the case where, as contemplated in the draft SRLUP, Strategic Agricultural Land is being impacted. The reduction in volume placed in front of Coolmore and the reduction in time of visual impacts are very substantial and exceed 50% gain in improved circumstances, with relatively minimal impact on AAMC operations.

5. Conclusion

- Option 4 provides benefits to both parties in both absolute and process terms because it can reduce substantially, the visual impact issues for Coolmore. In arriving at this conclusion I have considered and judged the following:
    - AAMC's "*primary objective was to develop a mine plan that minimised potential environmental and social impacts while*

maximising resource recovery and operational efficiency" (EA Section 4.16.5, p70). Option 4 better achieves this objective than Option 3

- AAMC "*is committed to the continuation of the stakeholder engagement plan and is seeking to achieve the best possible outcomes for all Project stakeholders*" (EA Section 6.5 p112). It is my considered opinion that consultation is incomplete on this issue.

- I disagree with the conclusion by AAMC that the EA project is the most environmentally sensitive and economically efficient alternative for all stakeholders, because Option 3 bund is unnecessarily large, imposing and confronting to Coolmore. Also, it is not the shortest timeframe for building. Option 4 is a substantial improvement for the Houston pit bund design and should be adopted by AAMC before any further detailed mine planning is embarked upon.

- I believe that had AAMC continued with further co-operative consultation in the earlier stages of their mine planning, then a better Houston pit bund solution would have been forth coming for their EA.

J Dwyer 18/1/13

John Dwyer

- **Project & Mine Management**
- **Social, Environmental & Government Approvals**
- **Audit & Due Diligence**

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John is a mining industry professional, with broad managerial skills gained from over 40 years experience in both the energy and mineral sectors.

Management experience has been gained in all aspects of the industry from research and development, exploration, planning and approvals, mine development and construction through to production, processing, environment, marketing and closure, in mines which varied from small scale underground to large scale open cut operations.

A particular strength is the ability to conceptualise and analyse complex, multi dimensional problems, devise strategies, then build and lead collaborative teams of diverse professionals who are happy to remain focussed on striving to optimise and bring to completion, the core goals for the organisation.

John has also been involved with Government policy and regulatory committees, particularly in the coal mining industry. These committees have assessed and advised on matters that range from industry professional qualifications, mineworker health, to community, social and environmental management, including initiating the Mine General Managers Forum in Muswellbrook, where mines meet with Council to discuss and coordinate responses to collective, mine related community concerns.

A substantial part of the mineworker health contributions to government policy concerned a decade of experience with underground coal mine operations.

More recently John has completed environmental due diligence audits, mine approvals and provided strategic advice to corporations and to the NSW government on future coal resources.

Professional Affiliations and Registrations

- 1st Class Underground Metal Mine Manager's Certificate, NSW & SA.
- Open Cut Coal Mine Manager's Certificate, NSW.
- Australasian Institute of Mining and Metallurgy (Fellow)
- Mine Manager's Association of Australia
- Hunter Valley Mines Rescue Station
- For 10 years a member of the Joint Coal Board Dust Committee (on mineworker health)

Fields of Competence

- Strategic Advice
- Mine Exploration, Evaluation and Planning
- Social, Environmental and Government Approvals for Major Mine and Infrastructure Projects
- Major Project Management
- Mine Management and Operational Efficiency
- Community/Public and Media Relations
- Mine Site Investigation, Remediation & Closure
- Due Diligence and Auditing

Key Industry Sectors

- Energy
- Mining & Extractive
- Minerals

Education

- Bachelor of Engineering (Mining) University of NSW 1970
- Master of Mineral & Energy Economics, Macquarie University 1997.

Languages

- English and French (basic)

Key Projects and Experience.

2008-2009 NSW Government.
Electricity supply resource assessment and evaluation.
Preparing the Cobbora project for NSW power generators.

2006-2008 Leighton Contractors Pty Ltd
Joined LCPL to re-establish the firm in the Upper Hunter Valley, with the particular aim of securing mining infrastructure projects. Re-establishment was firmly achieved in 2007 with the appointment of LCPL in an alliance contract to build the infrastructure for a major green field mine site.
2002-2005 John Dwyer & Associates Pty Ltd. ***Established and operated an independent consultancy to the global mineral and energy industries.***

2000-2002 ERM. ***Varied assignments; Bankable due diligence for acquisitions, audits, mine approvals and strategic advice to corporations***

1999-2000* Coal & Allied.** ***Eliminating Risks to Public Safety and Environmental Hazards in an Old Coal Mining Area in the Lower Hunter Area, NSW, Building and leading a team that investigated and successfully extinguished a coal mine fire, which had progressed, to an unknown extent, from abandoned surface workings into adjacent, abandoned underground workings. This fire was a major public safety and environmental problem in the sensitive Lower Hunter area. The problem was eliminated in noxious and hazardous conditions without any injuries or incidents. The site is now restored to bushland.

In addition, very large tracts of old coal mining land were surveyed and examined, with state of the art techniques, to ascertain other public safety and environmental risks. Priority targets were then systematically managed, to either eliminate or reduce to acceptable levels, the risks to external stakeholders.

1990-2000 Coal & Allied. ***Mount Pleasant Open Cut Coal Mine project. Hunter Valley, NSW.*** Investigating world wide coal resources, then conceiving, targeting and securing by negotiation with government, the rights to explore a large deposit of coal.

Subsequently directing the exploration, evaluation, planning and public approval phases for one of the State's largest scale open cut coal mine projects, located in a complex and sensitive environment. This required delicate social and diplomatic skills, persistence, patience and determination along with sound technical skills, in order to gain company approval and community acceptance without any formal complaints about activities or plans. Community support was gained after initiating negotiations with the local government authorities and by involving them in the decision making process, all the time ensuring the economic potential was improved and not sacrificed. Formal planning approval was secured with strong local and state government support. This achievement forms the secure base from which the company can more than double its coal reserves and could increase potential production capacity by 70%.

1987-1990 Coal & Allied. ***Hunter Valley No 2 Open Cut Coal Mine.*** Leading the design, gaining approvals and then managing the construction of large mine/civil structures, on time and within budget. This included pushing the boundaries of practical design criteria to achieve an innovative road structure, the cost of which was reduced from approximately $8M by conventional standards to under $2M after R&D taxation concessions were won. The road has exceeded its design and life expectations, returning even further economies.

1979-1987 Coal & Allied. ***Hunter Valley No.1 Open Cut Coal Mine NSW.*** Over 8 years, in a sensitive environment and challenging industrial relations climate, managing a major open cut coal mine which expanded production capacity threefold and increased productivity by

over 50%. This open cut mine also set standards by which other mines were judged by both government and peers in the industry. The mine has been very profitable and has won numerous awards as a result of its design, planning and operational controls.

Other Projects

1976-1978 CSR Limited, Woomera, South Australia.
Managing a medium sized open cut copper, lead zinc mine in an isolated area.

1975 CSR Limited, Indonesia.
Planning, operational and technical experience in alluvial tin mining.

1974 CSR Limited, Qld and Western Australia.
Managing grass roots exploration.

1973 CSR Limited, Kalgoorlie, Western Australia.
Operational experience in high grade narrow vein and low grade bulk underground gold mining.

1972 CSR Limited, Mt Newman, Western Australia.
Technical and operational experience in large scale iron ore mining.

1970 Cobar Mines Limited, Cobar, New South Wales.
Contract mining in a large scale underground copper mine.

1965 to 1969
BHP, Belmont NSW; underground coal mining, ESSO, Bass Strait Victoria; oil and gas exploration
Cobar Mines Pty Ltd, Cobar NSW; underground copper lead and zinc mining
Falconbridge Ltd, Ontario, Canada; underground nickel mining.

ANNEXURE B – OPTION 4